SMOLEY'S PARALLEL TABLES *of* LOGARITHMS *and* SQUARES

W. T. JACKSON

EIGHTH EDITION

SMOLEY'S TABLES

PARALLEL TABLES
OF
LOGARITHMS AND SQUARES

DIAGRAMS FOR SOLVING RIGHT TRIANGLES

ANGLES AND TRIGONOMETRIC FUNCTIONS
CORRESPONDING TO GIVEN BEVELS

COMMON LOGARITHMS OF NUMBERS

TABLES OF LOGARITHMIC AND NATURAL TRIGONOMETRIC FUNCTIONS AND OTHER TABLES

For Engineers, Architects and Students

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PREFACE TO EIGHTH EDITION.

The popularity of the chart included in the last edition of this work, as evidenced by the large sales that followed its publication, induced the writer to extend the field of application of this simple device for solving right triangles, by preparing three additional diagrams. One of these diagrams is constructed so as to enable the solution of a right triangle with dimensions expressed in units and decimals. Of the other two, one has its lines subdivided into units and twelfths, representing feet and inches, and the other into units and quarters. Each of these charts has its own field of application, but owing to the nature of their construction, the two last mentioned are even more convenient for reference than the old diagram. A description, as well as examples of the application of the new diagrams, will be found elsewhere in this book.

This edition contains many other important improvements. The first one to be mentioned is the inclusion of a new table giving the *six natural functions corresponding to given bevels.* This table has been combined with the Table of Angles and Logarithmic Functions Corresponding to Given Bevels, which was also originated by the writer and published for the first time in the third edition of this work, in 1906.

Besides the widening of its scope, the book has been thoroughly revised. All the text matter has been rewritten and a number of new examples have been inserted. In order to facilitate reference, the part headed Explanations and Examples has been put ahead of the tabular matter. It might also be well to mention that a more suitable paper has been selected for this edition, and that the binding has been made more substantial.

THE AUTHOR.

910 Taylor Avenue, Scranton, Pa., January, 1914.

Preface to Fifth Edition.

This edition is a combination of the old set of tables of the previou edition, to which has been added *a multiplication table for rivet spacing* with a new set of 5-decimal logarithmic-trigonometric tables, comprisin the following separate tables:

1. Common logarithms of numbers from 0 to 10,000, with tables o proportional parts.

2. Logarithms of the sine and tang. from 0° to 3° and of the cosin and cotang. from 87° to 90°, varying by 10 seconds, with proportiona parts for single seconds.

3. Logarithms of the sine, tang., cotang. and cosine for each minut of the quadrant, with proportional parts for seconds.

4. Natural functions.

Of these, the table of log. functions is, of course, the most importan one, and special attention is called to its new arrangement, the advantag of which consists mainly in relieving the eye of the great mass of figure concentrated on the pages of the old arrangement; it also permit the use of larger type and clearer distribution of same.

With the inclusion of the new set of tables, this book not onl completely covers the field of all classes of technical work,* but it ha become a *Universal Calculator*, being available for computations with th United States or English measures as well as with decimals (metric o feet).

While these new features of the book will appeal to students an such engineers and draftsmen as have a variety of computations to dea with, there will be many users whose special field of computations ca be covered either with the "old" or the new set of tables alone, and thi is the reason why these two sets of tables are published separately.

673 N. Claremont Ave. THE AUTHOR.
CHICAGO, January, 1908.

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*Except, of course, where 7 decimal tables like Bruhn or Vega will be needed, bu this will generally be the case when calculations exact to $\frac{1}{32}''$ with dimensions betwee 50 and 100 feet and to $\frac{1}{16}''$ with dimensions above 100 feet will be required.

PREFACE TO THIRD EDITION.

The success achieved by the previous editions of this work encouraged the author to undertake its extension to 100 feet. The extended part has, however, been tabulated by steps of 1/16″ instead of 1/32″ as the latter for lengths of over 50 feet would have little value, if any.

The computation and checking of the extended part has been carried out in the same careful manner as the old tables and it is therefore believed that it is as accurate as the old tables proved to be.

The parallel system of tabulation, visa the placing of the squares and logs. of the same numbers opposite each other, has been retained, this arrangement offering a number of advantages, namely: (1) The square and the log. of a number are often needed at the same time. (2) In many calculations the square of a number is given and its log. required or vice versa, the number itself being of no use to the calculator; the parallel arrangement of the tables enables in such cases the reading of the log. directly from its square or vice versa. (3) The log. of the square can be obtained by multiplying its corresponding log. item by 2.

In an article by Mr. F. D. Davis entitled: "Smoley's Tables; Some Convenient Methods by Their Use," published in the Engineering News of Dec. 25, 1902, Mr. Davis is discussing this special feature of these tables (visa their parallel arrangement) demonstrating the usefulness resulting from it by applying the tables to a number of examples relating mainly to mensuration. But in the opinion of the writer the parallel combination of the tables finds its most effective field of application in the solution of triangles for the purpose of figuring the data required for structural detail drawings. The most general problem we have here to deal with is this: With two given sides of a right-angle triangle, usually the main dimensions of the frame (as in a roof truss the half span and rise), to find: 1, the hypothenuse; 2, the bevel or slope; 3, the log. functions of the angles of the triangle, the latter for the purpose of figuring the diagonals of the frame, etc. Not only does the parallel combination of the tables enable the figuring of these three data in one process of calculation, but they are mutually checking each other at the same time. In examples VI and VIII, pages 328 and 330, the hypothenuse, bevel, log tang. (visa the log. of the bevel) and log. sec. are obtained, the log. of any other function can be figured in the same manner as the log sec.

The Parallel combination of the logs. and squares is thus *dispensing with the use of trigonometrical tables* for all ordinary work of the structural draftsman, limiting their use to the rare cases where angles are given or required expressed in degrees, minutes, etc. The Table of Angles and Log Functions corresponding to given bevels, inserted in this edition, will in many such cases answer the purpose. The uses to which this table can be applied are manifold; a few more typical are here mentioned:

1. It offers an exact and rapid solution of a right-angle triangle when given by the bevel and one of its sides. When the bevel is a derived quantity and consequently approximate, the solution is also approximate, but sufficiently exact for many practical considerations.
2. The bevel or slope can directly be read from the angle expressed in degrees, minutes, etc., or vice versa.
3. The bevel can be obtained from the hypothenuse and one of the sides of the triangle without first figuring the other side by means of the table of squares. A few numerical examples showing the application of this table will be found on pages 302 and 303.

CONSTANTINE SMOLEY.

673 N. Claremont Ave.
Chicago, Ill., March, 1906.

PREFACE TO FIRST EDITION.

This work contains logarithms and squares of feet, inches and fractions thereof expressed in decimals of a foot and varying by $1/32$ of an inch from zero to fifty feet. While this table of logarithms is published for the first time, there are already in use two tables of squares, one by Mr. Buchanan, and the other, a more recent work, by Mr. Hall, whose tables give squares varying by $1/16$ of an inch, while the author's table enables the calculator to obtain results up to fifty feet in thirty-seconds of an inch without interpolation, which is a greater advantage than tables varying by $1/16$ of an inch for lengths up to 100 feet. The number of cases where it is desirable to obtain results in thirty-seconds of an inch for the lengths less than fifty feet, by far exceed those cases where calculations are to be made with dimensions from 50 to 100 feet. In the latter cases the calculator can work with the dimensions divided by two and then by multiplying his results by two, still obtain them correct to $1/16$ of an inch without interpolation. The distinctive feature of this work, however, is its new element—the table of logarithms. This opens up a wider field of application than the squares themselves, and the combination of both tables increases the value of each of them. It will be of special value to the structural draftsman, as the most frequent problems he has to deal with are handled by means of these tables with great saving of time and fewer chances of making errors, as can be seen from the examples shown at the end of this book.

One of the German philosophers has said that "Method is the soul of Philosophy," and it is equally true in a work of this kind that method gives value and insures reliability. As regards the table of squares, we give Mr. Buchanan full credit as pioneer in this field, but his method is primitive, and his work lacks accuracy, as has already been pointed out by Mr. Hall, whose method is entirely correct. But the author made use of a still different method, having the advantage over Mr. Hall's in being simpler, requiring less work, and making it easier to check. It is as follows :

Let a^2 be the *first* item in any column in our table of squares, a being equal to any whole number of feet plus a whole number of inches expressed in decimals of a foot; let, further, $b = 1/32''$ in decimals of a foot and n denote any whole number between 0 and 32.; any other item in the same column is then equal to $(a+n\,b)^2$, and the difference between any two consecutive items in that column can be expressed in the formula :

$$(a+nb)^2-[a+(n-1)b]^2=2ab+(2n-1)b^2.$$

Now, if a^2 is known, all the 32 items of the column can be obtained by consecutive additions to a^2 of the constant for that column, $2ab$, and the 32 different values of $(2n-1)b^2$. As these latter 32 values are constant for all columns of the table of squares, we have figured them out, and printed them in rotation on blank forms, leaving between each two a space for the item itself, and at the top of every blank we have put its corresponding a^2. We also have put in the items for each ½″. The value of $2ab$ having been written on a slip of paper we place it over a^2 and add it with a^2 and the first printed value of $(2n-1)b^2$ for $n=1$, and the first item is thus obtained; the slip is then moved down and added with the item just obtained and the second printed value of $(2n-1)b^2$ for $n=2$, and so on; only one addition being thus required to obtain an item, and after every 16 additions we have to obtain the item previously put in the blanks — that is, the top and the middle items. The latter we worked out in a manner similar to that just described, a denoting any whole number of feet; $b=$½″ in decimals of a foot, and n—any whole number between 0 and 24. It needed to be figured only to 12 feet, as after that the decimals repeat themselves. After the blanks were filled out, we compared every second item with those of Mr. Hall's tables, only three errors having been found in the latter. In order to discover any self-balancing error in the odd items, another table was calculated for the odd items and compared with the first results. The computation has been carried out to 7 decimals and reduced to 4; the first four pages to 11 and reduced to 6 decimals.

The computation of the table of logs. is based upon the formula :

$$\text{Log}\,\frac{a}{b}=\text{Log}\,a-\text{Log}\,b=\text{Log}\,a+\text{Colog}\,b.$$

Accordingly

$$\text{Log}\,(f'+i'')=\text{Log}\,\frac{12\,f+i}{12}=\text{Log}\,(12\,f+i)-\text{Log}\,12 \ldots\ldots\ldots\ldots(1)$$

$$\text{or}=\text{Log}\,(12\,f+i)+\text{Colog}\,12\ldots\ldots\ldots\ldots(1a)$$

$$\text{also Log}\,\left(f'+i''+\frac{t''}{32}\right)=\text{Log}\,\frac{12\times32\,f+32\,i+t}{12\times32}=$$

$$=\text{Log}\,(12\times32\,f+32\,i+t)-\text{Log}\,384\ldots\ldots\ldots\ldots(2)$$

$$\text{or}=\text{Log}\,(12\times32\,f+32\,i+t)+\text{Colog}\,384\ldots\ldots\ldots\ldots(2a)$$

The log. of any item is thus equal to the log. of the number of 32nds contained in that item, *minus* the constant log. of the number 384 or *plus* its Colog. If N be this number of 32nds contained in any item, ($N=12\times32f+32i+t$), the difference between the logs. of two consecutive items equals

$$d=\text{Log.}\frac{N+1}{384}-\text{Log.}\frac{N}{384}=\text{Log.}\,(N+1)-\text{Log.}\,N$$

This difference can easily be taken from a standard logarithmic table.

The top items of all columns having been determined by formulæ (1) and (1a), they and the difference d having been put on blanks printed for this purpose, the work was then carried on by means of consecutive additions of the differences, after every 32 additions having had a check in the first item of the next column. Independently of this we figured the table of logs. by the formula (2a) that is, by taking in rotation the logs. of all numbers from 1 to 19200 and adding to each log. the colog. of 384—and compared both results, and, finally, we used the formula (2) for checking the electroplates.

Vega's 7 decimal log. tables have been used, and the computation carried out to 7 decimals and reduced to 5. In all cases where the last two figures of the 7 decimal Log. are 50, reference has been made to the "U. S. Coast and Geodetic Survey's" 10 decimal Log. tables.

On the last pages of this book will be found some explanations and examples showing the use of these tables. The former are intended for those who are not familiar with the use of Log. tables.

CONSTANTINE SMOLEY.

CLEVELAND, O., AUGUST, 1901.

EXPLANATIONS AND EXAMPLES.

Although it is assumed that the users of this book of tables are familiar with the principles of logarithms and trigonometry, a few typical examples are given, mainly with a view of showing some of the more important uses of the special tables introduced in this work, namely, the Parallel Tables of Logarithms and Squares and the Table of Angles and Functions Corresponding to Given Bevels, which, for the sake of brevity, will here be referred to simply as the Parallel Tables and Table of Bevels, respectively, as by the use of these tables the solutions of many standard problems in trigonometry are greatly simplified. This is especially true with regard to solutions of triangles when computing dimensions of structural frames. In problems of this class, unlike those relating to surveying, angles measured in degrees, minutes, and seconds are usually not given, nor are they required, because of the fact that in structural work the direction of a member with reference to another is usually not given by the angle that these members form with each other, but by the so-called *bevel* or *slope*, which is the *natural tangent of the angle, expressed in inches and fractions of an inch and referred to 1 foot or 12 inches as a unit*. For example, the angle that the side $A\,B$, Fig. 1, makes with $A\,C$ is indicated by an elementary triangle in which the base is 12″ and the altitude s is the so-called slope, or bevel, the hypotenuse coinciding with the line $A\,B$. It is true that computations of this nature often involve the solution of a net of triangles, in which the angles of one triangle might be needed in order to solve the next triangle; but, ordinarily, for further calculations it is not the angles themselves that are required but their trigonometric functions. It is therefore primarily with functions of angles, especially with the logarithms of these functions, that we have to deal here, rather than with the angles themselves. This is one of the reasons why the tables referred to are particularly suitable for this class of computations, the combination of the logarithms and the squares making it possible to determine with sufficient accuracy the functions of the angles involved without first computing the angles themselves, as will be shown in the following examples.

In performing this class of computations, which are often very complicated, it is also important to be in a position to check each step of the work in order to avoid the carrying over of errors in the further calculations. The combination of the elements of the Parallel Tables, as well as those of the Table of Bevels, affords effective means for this purpose. It might also be well to mention that the direct work, as well as the checking, is greatly facilitated by the arrangement of the Parallel Tables, in which the logarithms and the squares are placed side by side, enabling the taking from the table of both values at the same time when the number is given, and to read the square from the logarithm and vice versa, without first determining the number, when the latter is not known.

Problem I.—In the right triangle ABC, Fig. 1, the sides a and b are known. Find c, s, and the logarithms of the functions of the angle A. This problem is of frequent occurrence in structural work. The two given sides are usually the main dimensions of a frame, as in a roof truss the half span and rise, and the logarithmic functions are required in order to determine the dimensions of the diagonals of the frame.

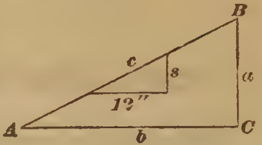


Fig. 1.

Solution.—Take out from the Parallel Tables the logarithms and squares of a and b. Subtract log b from log a; the difference is $\log\tan A = \log s$. Add b^2 to a^2; the sum is c^2. Referring again to the Parallel Tables, take out c and log c corresponding to the nearest c^2. Similarly, take out s and s^2 corresponding to the nearest log s. Then, $\log\sec A = \log c - \log b$. The logarithms of the other functions may then be easily computed from those of the tan A and sec A.

Thus, $\log\sin A = \log\tan A - \log\sec A$;
$\log\csc A = \log\sec A - \log\tan A$;
$\log\cos A = -\log\sec A$;
and $\log\cot A = -\log\tan A$.

It must be noted here, that since log c has been obtained from the table as the nearest value corresponding to c^2, the functions derived from it will slightly deviate from their exact values. These deviations, however, will have no appreciable effect on the further calculations involving these functions as long as the new dimensions to be computed are not larger than c. With the conditions as indicated in this problem, in which a and b are assumed to be the main dimensions of a frame, the quantities to be derived will be smaller than c; the effect of the slight errors in the functions may therefore be disregarded. If desired, however, the slight errors may be entirely eliminated by interpolating for the correct value of log c from c^2. This should be done in cases when the dimensions to be calculated are larger than those from which the function has been derived.

For the purpose of checking the computed values, note that $\sec^2 A = 1 + \tan^2 A = 1 + s^2$. The numerical value of sec A can therefore be obtained from the table of squares. On the other hand, the same value of sec A may also be determined from log sec A. It is evident that both values must agree if the computations were made correctly.

As an illustration, let $a = 15'\ 7\frac{1}{2}''$ and $b = 35'\ 9\frac{3}{4}''$. Proceeding by the method just explained, we obtain:

$$\begin{array}{rl} \log a = 1.19382 & a^2 = 244.1406 \\ \log b = \underline{1.55403} & b^2 = \underline{1282.5352} \\ \log\tan A = \log s = 9.63979 & c^2 = 1526.6758 \end{array}$$

Hence, $s = 5\frac{1}{4}$ and $s^2 = .1914$; also, $c = 39'\ 0\frac{7}{8}''$ and $\log c = 1.59188$; therefore, $\log\sec A = \log c - \log b = 1.59188 - 1.55403 = 0.03785$.

The logarithm of any other function may now be calculated from those of the tangent and the secant. For instance, log sin A= log tan A—log sec A=9.63979—0.03785=9.60194.

For the purpose of checking, note that $\sec^2 A=1.1914$ and that log sec A has already been found as 0.03785. The numerical value of sec A, in feet and inches, is then determined both by its logarithm and by its square, as 1′ 1$\frac{3}{32}$″. The calculations may therefore be assumed as correct.

	N	L	S
a	15—7½	1.19382	244.1406
b	35—9¾	1.55403	1282.5352
c	39—0⅞	1.59188	1526.6758
tan $A=s$	5¼	9.63979	.1914
sec A	1—1$\frac{3}{32}$	0.03785	1.1914
sin A		9.60194	

All values involved in this problem are tabulated in the accompanying table. A similar tabulation is recommended in all problems of this kind, as its use, especially in complicated computations, results in considerable saving of time and enables the rapid checking of the computed values. The letters N, L, and S indicate, respectively, the numerical value, the logarithm, and the square of the member given in the extreme left-hand column. As these values are placed in the table side by side, the entire set is at once taken from the table when one of them is given. The table is to be filled out gradually as the work is progressing. In the following examples, except in problem VII, these tabulations are omitted on account of lack of space.

PROBLEM II.—In the right triangle $A\ B\ C$, Fig. 1, the sides b and c are known. Find a and s, and the logarithmic functions of the angle A.

SOLUTION.—This problem is solved in much the same manner as the preceding one, the relation $a^2=c^2-b^2$ being used for finding a and log a. The bevel s, however, is here preferably determined from the Table of Bevels as the nearest one corresponding to log sec A=log c—log b. After log tan A has been computed, s may again be determined as a check on the obtained value of the bevel, as well as on the values of a and log sec A.

As an illustration, let b=36′ 11½″ and c=39′ 3¼″. Reference to the Parallel Tables shows that

$$\begin{array}{rr} \log c = 1.59407 & c^2 = 1542.1984 \\ \log b = \underline{1.56771} & b^2 = \underline{1365.9184} \\ \log \sec A = 0.02636 & a^2 = 176.2800 \end{array}$$

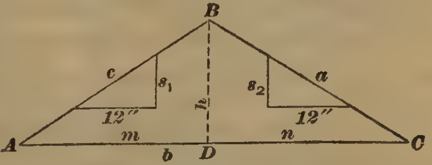


FIG. 2.

According to the Table of Bevels, $s=4\frac{5}{16}$, and according to the Parallel Tables, a=13′ 3$\frac{5}{16}$″ and log a=1.12307. Hence, log tan A=1.12307 — 1.56771=9.55536. From this, the bevel is again determined, from the Parallel Tables, as 4$\frac{5}{16}$, which shows that the calculations are correct.

PROBLEM III.—In the triangle ABC, Fig. 2, the sides a, b, and c are known. Find $m=AD$ and $n=DC$, BD being the altitude of the triangle.

Solution.—From the triangle ABD, $m=c \cos A$ (1) and $n=a \cos C$ (2), and from the triangle ABC, $a^2=b^2+c^2-2bc \cos A$ and $c^2=a^2+b^2-2ab \cos C$. Solving for $\cos A$ and $\cos C$, $\cos A=\frac{b^2+c^2-a^2}{2bc}$ (3) and $\cos C=\frac{a^2+b^2-c^2}{2ab}$ (4). Substituting these values of $\cos A$ and $\cos C$ in the expression for m and n, respectively, equations 1 and 2 become $m=\frac{b^2+c^2-a^2}{2b}$ and $n=\frac{a^2+b^2-c^2}{2b}$. By the table of squares, find $c^2+b^2-a^2=w^2$ and $a^2+b^2-c^2=v^2$. Then, $m=\frac{w^2}{2b}$ and $n=\frac{v^2}{2b}$.

Hence, $\log m=\log w^2-\log (2b)$

and $\log n=\log v^2-\log (2b)$

Log b may be taken from the Parallel Tables at the same time that b^2 is found. The values of w^2 and v^2 are expressed in decimals; their logarithms may be taken from the Table of Common Logarithms of Numbers, or log w and log v may be determined as the values corresponding to w^2 and v^2 in the Parallel Tables and then multiplied by 2. Time may be saved by using the second method, but the first method is more accurate.

As a check, the sum of m and n must be equal to b.

Let, for example, $a=9' \, 7\frac{5}{8}''$, $b=15' \, 6\frac{3}{4}''$, and $c=8' \, 5\frac{1}{2}''$. Then, $w^2=c^2+b^2-a^2=71.5434+242.1914-92.8413=220.8935$ and $v^2=a^2+b^2-c^2=92.8413+242.1914-71.5434=263.4893$; $\log w^2=2.34418$; $\log v^2=2.42076$ and $\log (2b)=1.19208+0.30103=1.49311$; $\log m=2.34418-1.49311=0.85107=\log 7' \, 1\frac{5}{32}''$ and $\log n=2.42076-1.49311=0.92765=\log 8' \, 5\frac{19}{32}''$. As a check, $m+n=7' \, 1\frac{5}{32}''+8' \, 5\frac{19}{32}''=15' \, 6\frac{3}{4}''$.

Problem IV.—In the triangle ABC, Fig. 2, the three sides a, b, and c are known. Find the bevels s_1 and s_2.

Solution.—*First Method.*—Compute m and n as in problem III. The bevels can then be determined from the triangles ABD and BCD, as explained in Problem II.

Second Method.—Using the formulas $\cos A=\frac{b^2+c^2-a^2}{2bc}$ and $\cos C=\frac{a^2+b^2-c^2}{2ab}$, determine log cos A and log cos C and take the corresponding bevels from the Table of Bevels.

Third Method.—Calculate the angles A and C by the formulas $\sin\frac{A}{2}=\sqrt{\frac{(p-c)(p-b)}{bc}}$ and $\sin\frac{C}{2}=\sqrt{\frac{(p-a)(p-b)}{ab}}$, in which $p=\frac{a+b+c}{2}$. Then, take the bevels corresponding to A and C from the Table of Bevels.

In the following, the second and third methods are illustrated by a numerical example, assuming for a, b, and c the same values as in Problem III.

In applying the second method,

$$\cos A=\frac{b^2+c^2-a^2}{2\,b\,c}=\frac{w^2}{2\,b\,c} \text{ and } \cos C=\frac{a^2+b^2-c^2}{2\,a\,b}=\frac{v^2}{2\,a\,b}.$$

Hence, $\log\cos A=\log w^2-\log(2\,b\,c)=9.92379$

and $\log\cos C=\log v^2-\log(2\,b\,a)=9.94378.$

Referring to the Table of Bevels, it is found that $s_1=7\frac{25}{32}''$ and $s_2=6\frac{17}{32}''$.

In applying the third method, $p=16'\ 9\frac{15}{16}''$; $p-a=7'\ 2\frac{5}{16}''$; $p-b=1'\ 3\frac{3}{16}''$; and $p-c=8'\ 4\frac{7}{16}''$.

Therefore, $$\sin\frac{A}{2}=\sqrt{\frac{1'\ 3\frac{3}{16}''\times 8'\ 4\frac{7}{16}''}{15'\ 6\frac{3}{4}''\times 8'\ 5\frac{1}{2}''}}$$

and $$\sin\frac{C}{2}=\sqrt{\frac{7'\ 2\frac{5}{16}''\times 1'\ 3\frac{3}{16}''}{15'\ 6\frac{3}{4}''\times 9'\ 7\frac{5}{8}''}};$$

whence, $A=32°\ 57'\ 34''$ and $C=28°\ 31'\ 42''$.

Referring to the Table of Bevels, it is found that $s_1=7\frac{25}{32}''$ and $s_2=6\frac{17}{32}''$, as before.

PROBLEM V.—In the triangle ABC, Fig. 2, the sides b and c are given and the logarithmic functions of the angle A are known. Find the side a and the bevel s_2.

SOLUTION.—*First Method.*—Solve the triangle ABD for the values of h and m by the formulas $h=c\sin A$ and $m=c\cos A$. Then, since $n=b-m$, the triangle BDC may be solved and the values of a and s_2 obtained, as explained in connection with Problem I.

Second Method.—Determine a and $\log a$ by the Parallel Tables from the relation $a^2=b^3+c^2-2\,b\,c\cos A$. Then, employing the formula $\sin C=\frac{c}{a}\sin A$, compute $\log\sin C=\log c+\log\sin A-\log a$ and take the corresponding bevel from the Table of Bevels.

Let, for example, $c=10'\ 7\frac{1}{2}''$ and $b=18'\ 5''$, and let the bevel $s_1=9\frac{1}{4}''$; $\log\sin A$ and $\log\cos A$ may therefore be obtained from the Table of Bevels, as $\log\sin A=9.78569$ and $\log\cos A=9.89873$. Then, in using the first method, it is found by reference to the Parallel Tables that $\log c=1.02633$ and $c^2=112.8906$. Therefore, $\log h=1.02633+9.78569=0.81202$, and $\log m=1.02633+9.89873=0.92506$. Therefore, $h=6'\ 5\frac{27}{32}''$ and $h^2=42.0809$, $m=8'\ 4\frac{31}{32}''$, and $m^2=70.7964$.

As a check, $h^2+m^2=c^2=42.0809+70.7964=112.8773$, which gives for c the value of $10'\ 7\frac{1}{2}''$. To solve, now, the triangle DBC, $n=18'\ 5''-8'\ 4\frac{31}{32}''=10'\ 0\frac{1}{32}''$. Then, $\log n=1.00011$ and $n^2=100.0521$. Proceeding now as in Problem I, it is found that $s_2=7\frac{25}{32}''$ and $a=11'\ 11\frac{1}{16}''$.

To apply the second method,

$\log b=1.26521$ and $b^2=339.1736$;
$\log c=1.02633$ and $c^2=112.8906$;
$\log(2\,b\,c\cos A)=2.49130=\log 309.957$.

Hence, $a^2=339.1736+112.8906-309.957=142.1072=(11'\ 11\frac{1}{16}'')^2$ and $\log a=1.07634$. To determine the bevel, the formula $\sin C=$

$\frac{c}{a}$ sin A is applied; whence, log sin C=log c+log sin A—log a= $1.02633+9.78569-1.07634=9.73568$, and by reference to the Table of Bevels it is found that $s_2=7\frac{23}{32}''$.

PROBLEM VI.—In the frame shown in Fig. 3, in which $A\ B\ C$ is a right triangle, are given $B\ C$, $A\ C$, and $A\ D$. Find $A\ B$, $D\ C$, and the bevels s_1, s_2, and s_3.

SOLUTION.—First solve triangle $A\ B\ C$, proceeding exactly as in problem I. Then determine $D\ C$ and s_2 by either of the methods explained in problem V. Finally, s_3 may be computed from the triangle $D\ B\ C$ by proceeding as in problem IV, or by solving triangle $A\ C\ C'$, thus determining $D\ C'$ and $C\ C'$, and then obtaining s_3 from the triangle $D\ C\ C'$. The bevel s_3 may also be determined by computing the angle $B\ D\ C=B\ A\ C+D\ C\ A$. The bevel corresponding to this angle may then be obtained by reference to the Table of Bevels.

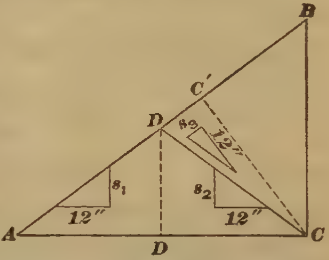


FIG. 3.

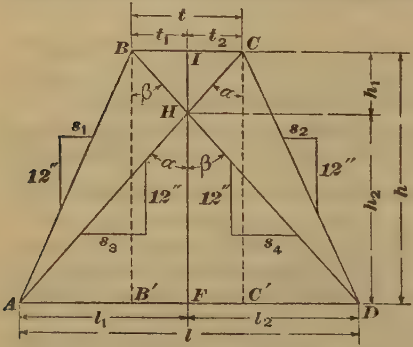


FIG. 4.

PROBLEM VII.—In the frame shown in Fig. 4 are given s_1, s_2, h and t. Calculate the dimensions of all the members, and the bevels s_3 and s_4.

SOLUTION—First solve the triangle $A\ B\ B'$ and $D\ C\ C'$, proceeding in the same manner as explained on pages 302 and 303 in connection with the Table of Bevels. Then solve triangles $A\ C\ C'$ and $D\ B\ B'$, proceeding exactly as in problem I. Next compute h_1 and h_2 by the formulas $h_1=\frac{t\,h}{l+t}$ and $h_2=\frac{l\,h}{l+t}$, checking the results by the relation $h_1+h_2=h$.

Then, $l_1=h_2 \tan \alpha$; $H\ C=h_1 \sec \alpha$;
$l_2=h_2 \tan \beta$; $A\ H=h_2 \sec \alpha$;
$t_1=l_1-A\ B'$; $B\ H=h_1 \sec \beta$;
$t_2=l_2-C'\ D$; $D\ H=h_2 \sec \beta$.

As a check, $l_1+l_2=l$; $C H+A H=A\ C$;
$t_1+t_2=t$; $B H+H D=B\ D$.

Also $t_1^2+h_1^2=B\ H^2$; $l_1^2+h_2^2=A\ H^2$;
$t_2^2+h_1^2=H\ C^2$; $l_2^2+h_2^2=H\ D^2$.

In the accompanying table are given the values involved in the calculations for the frame shown in Fig. 4, in which $s_1 = 1\frac{3}{4}''$, $s_2 = 1\frac{1}{2}''$, $h = 25'\,6''$, and $t = 15'\,3''$.

	N	L	S		N	L	S
h	25′ 6″	1.40654	650.2500	$\sec\beta$	1′ $2\frac{29}{32}$″	0.09403	1.5431
$A\,B'$	3′ $8\frac{5}{8}$″	0.57040	13.8291	h_1	10′ $5\frac{1}{4}$″	1.01858	108.9414
$A\,B$	25′ $9\frac{1}{4}$″	1.41111	664.1359	h_2	15′ $0\frac{3}{4}$″	1.17790	226.8781
$C'\,D$	3′ $2\frac{1}{4}$″	0.50345	10.1602	l_1	11′ $4\frac{13}{16}$″	1.05696	129.9838
$D\,C$	25′ $8\frac{3}{8}$″	1.40991	660.3829	l_2	11′ $1\frac{1}{16}$″	1.04484	122.9558
$A\,C'$	19′ $3\frac{5}{8}$″	1.28560	372.5704	t_1	7′ $8\frac{3}{16}$″	0.88549	59.0176
$A\,C$	31′ $11\frac{25}{32}$″	1.50490	1022.8204	t_2	7′ $10\frac{13}{16}$″	0.89768	62.4265
tan [illegible] $= s_3$	$9\frac{3}{32}$″	9.87906	.5743	$A\,H$	18′ $10\frac{11}{16}$″	1.27626	356.8557
$\sec\alpha$	1′ $3\frac{1}{16}$″	0.09836	1.5743	$H\,C$	13′ $1\frac{3}{32}$″	1.11694	171.3781
$D\,B'$	18′ $9\frac{1}{4}$″	1.27348	352.3442	$D\,H$	18′ $8\frac{7}{16}$″	1.27193	349.8069
$D\,B$	31′ $7\frac{31}{32}$″	1.50057	1002.5942	$H\,B$	12′ $11\frac{17}{32}$″	1.11261	167.9859
$\tan\beta = s_4$	$8\frac{27}{32}$″	9.86694	.5431				

PROBLEM VIII.—In the frame shown in Fig. 5 are given m, t, n, h_1, and h_2. Required, all the dimensions of the members of the frame and their bevels.

SOLUTION.—First solve triangles $A\,B\,B'$, $B\,C\,C''$, and $C\,C'\,D$, proceeding as in problem I, thus determining $A\,B$, $B\,C$, $C\,D$, s_1, s_2, and s_3. Next, solve triangles $A\,C\,C'$ and $D\,B\,B'$, also as in problem I, thereby obtaining $A\,C$, $B\,D$, and the bevels s_4 and s_5. Then determine x and y by the formulas

$$x = \frac{l\,(m+t)}{l+t}$$

and $$y = \frac{l\,(n+t)}{l+t}.$$

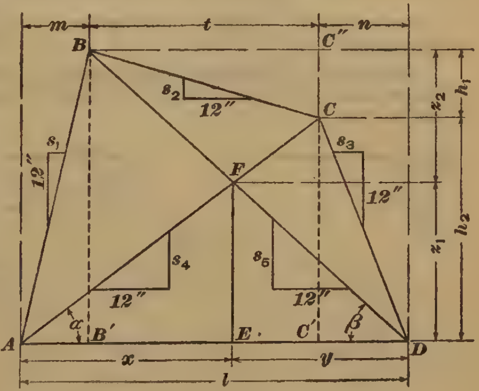


FIG. 5

Then,

$$z_1 = x \tan\alpha = y \tan\beta;$$
$$z_2 = E\,B' \tan\beta;$$
$$A\,F = x \sec\alpha;$$
$$F\,C = E\,C' \sec\alpha;$$
$$F\,D = y \sec\beta;$$
$$F\,B = B'\,E \sec\beta.$$

As a check,

$$z_1 + z_2 = h_1 + h_2;$$
$$A\,F + F\,C = A\,C;$$

and $$D\,F + B\,F = B\,D.$$

PROBLEM IX.—In Fig. 6 are given w_1, w_2, and s. To find AB, AD, DC, EF, and AE.

SOLUTION.—In this problem, as well as in the next one, the Table of Bevels is most conveniently employed. The following formulas may be used: $AB = w_1 \sec a$; $AD = w_2 \csc a$; $DC = w_1 \tan a - w_2 \cot a$; $EF = \frac{DC \times w_1}{w_1 + w_2}$; and $AE = w_1 \tan a - EF$.

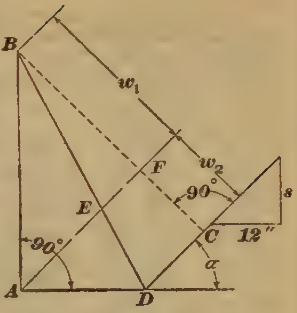


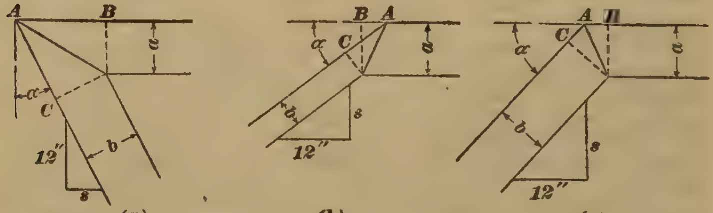
FIG. 6

Let, for example, $w_1 = 5''$; $w_2 = 3''$; and $s = 10\frac{13}{16}''$. Then, from the Table of Bevels, $\sec a = 1.346$, $\csc a = 1.494$, $\tan a = .901$, and $\cot a = 1.110$. Therefore, $AB = 5'' \times 1.346 = 6\frac{3}{4}''$; $AD = 3'' \times 1.494 = 4\frac{1}{2}''$; $DC = 5'' \times .901 - 3'' \times 1.110 = 1.175'' = 1\frac{3}{16}''$; $EF = \frac{1.175'' \times 5}{8} = .734'' = \frac{3}{4}''$; and $AE = 5'' \times .901 - .734'' = 3\frac{3}{4}''$.

When $w_1 = w_2 = w$; then, $DC = w(\tan a - \cot a) = 2w \cot(2a)$, $EF = \frac{1}{2} DC$, and $AE = \frac{w}{2}(\tan a + \cot a) = w \csc(2a)$.

PROBLEM X.—In Fig. 7 are given s, a, and b; and AB and AC are required.

SOLUTION.—There are three cases, as shown in (*a*), (*b*), and (*c*). The formulas to be applied in each case are given under the illustrations.



(*a*) (*b*) (*c*)

FIG 7.

$AC = (b + a \csc a) \tan a$
$AB = (a + b \csc a) \tan a$

$AC = (a \sec a - b) \cot a$
$AB = (a - b \sec a) \cot a$

$AB = (b \sec a - a) \cot a$
$AC = (a \sec a - b) \cot a$

Let, for example, in Fig. 7 (*c*), $a = 20''$, $b = 18''$, and $s = 11\frac{1}{2}''$. Referring to the Table of Bevels, it is found that $\sec a = 1.38506$. Therefore, $b \sec a - a = 18 \times 1.38506 - 20 = 4.9311$ and $a \sec a - b = 20 \times 1.38506 - 18 = 9.7012$. Hence, $AB = 4.9311 \times \cot a$ and $AC = 9.7012 \times \cot a$; whence,

$$\log AB = \log 4.9311 + \log \cot a$$

and

$$\log AC = \log 9.7012 + \log \cot a$$

According to the Table of Bevels, $\log \cot a = 0.01848$; hence,

$$\log AB = 0.69295 + 0.01848 = 0.71143 = \log 5.1455$$

and

$$\log AC = 0.98683 + 0.01848 = 1.00531 = \log 10.125$$

Therefore, $A\ B = 5\frac{1}{8}''$ and $A\ C = 10\frac{1}{8}''$.

These results were obtained by means of the Table of Common Logarithms and the Table of Decimal Equivalents. It is, however, simpler to subtract log 12 from the obtained log $A\ B$ and log $A\ C$, and obtain the results in inches directly from the Parallel Tables. Thus,

$$\log A\ B = 0.71143 - 1.07918 = 9.63225 = \log 5\frac{1}{8}''$$
$$\log A\ C = 1.00531 - 1.07918 = 9.92613 = \log 10\frac{1}{8}''$$

PARALLEL TABLES

OF

LOGARITHMS AND SQUARES

Of feet, inches, and fractions of inches, varying by one
thirty-second of an inch from zero to fifty feet, and
by one-sixteenth of an inch from fifty to
one hundred feet.

0′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	———	0.000000	8.92082	0.006944	9.22185	0.027778
1/32	7.41567	0.000007	8.93418	0.007385	9.22858	0.028653
1/16	7.71670	0.000027	8.94715	0.007840	9.23521	0.029541
3/32	7.89279	0.000061	8.95974	0.008308	9.24174	0.030443
1/8	8.01773	0.000109	8.97197	0.008789	9.24818	0.031359
5/32	8.11464	0.000170	8.98387	0.009284	9.25452	0.032288
3/16	8.19382	0.000244	8.99545	0.009793	9.26077	0.033230
7/32	8.26077	0.000332	9.00673	0.010315	9.26693	0.034186
1/4	8.31876	0.000434	9.01773	0.010851	9.27300	0.035156
9/32	8.36991	0.000549	9.02845	0.011400	9.27899	0.036140
5/16	8.41567	0.000678	9.03892	0.011963	9.28490	0.037137
11/32	8.45706	0.000821	9.04914	0.012539	9.29073	0.038147
3/8	8.49485	0.000977	9.05912	0.013129	9.29648	0.039171
13/32	8.52961	0.001146	9.06888	0.013733	9.30216	0.040209
7/16	8.56180	0.001329	9.07843	0.014350	9.30776	0.041260
15/32	8.59176	0.001526	9.08777	0.014981	9.31330	0.042324
1/2	8.61979	0.001736	9.09691	0.015625	9.31876	0.043403
17/32	8.64612	0.001960	9.10586	0.016283	9.32415	0.044495
9/16	8.67094	0.002197	9.11464	0.016954	9.32948	0.045600
19/32	8.69442	0.002448	9.12324	0.017639	9.33475	0.046719
5/8	8.71670	0.002713	9.13167	0.018338	9.33995	0.047852
21/32	8.73789	0.002991	9.13994	0.019050	9.34509	0.048998
11/16	8.75809	0.003282	9.14806	0.019775	9.35017	0.050157
23/32	8.77740	0.003588	9.15603	0.020515	9.35519	0.051331
3/4	8.79588	0.003906	9.16386	0.021267	9.36015	0.052517
25/32	8.81361	0.004239	9.17154	0.022034	9.36506	0.053718
13/16	8.83064	0.004584	9.17910	0.022814	9.36991	0.054932
27/32	8.84703	0.004944	9.18652	0.023607	9.37471	0.056159
7/8	8.86283	0.005317	9.19382	0.024414	9.37946	0.057400
29/32	8.87807	0.005703	9.20100	0.025235	9.38415	0.058655
15/16	8.89279	0.006104	9.20806	0.026069	9.38880	0.059923
31/32	8.90703	0.006517	9.21501	0.026917	9.39339	0.061205
1	8.92082	0.006944	9.22185	0.027778	9.39794	0.062500

0′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	9.39794	0.062500	9.52288	0.111111	9.61979	0.173611
1/32	9.40244	0.063809	9.52626	0.112854	9.62249	0.175788
1/16	9.40689	0.065131	9.52961	0.114610	9.62518	0.177979
3/32	9.41130	0.066467	9.53294	0.116380	9.62786	0.180183
1/8	9.41567	0.067817	9.53624	0.118164	9.63051	0.182400
5/32	9.41999	0.069180	9.53952	0.119961	9.63315	0.184631
3/16	9.42427	0.070557	9.54277	0.121772	9.63578	0.186876
7/32	9.42851	0.071947	9.54600	0.123596	9.63839	0.189134
1/4	9.43270	0.073351	9.54921	0.125434	9.64098	0.191406
9/32	9.43686	0.074768	9.55239	0.127285	9.64356	0.193692
5/16	9.44097	0.076199	9.55555	0.129150	9.64612	0.195991
11/32	9.44505	0.077644	9.55868	0.131029	9.64866	0.198303
3/8	9.44909	0.079102	9.56180	0.132921	9.65120	0.200629
13/32	9.45310	0.080573	9.56489	0.134827	9.65371	0.202969
7/16	9.45706	0.082058	9.56796	0.136746	9.65622	0.205322
15/32	9.46099	0.083557	9.57100	0.138679	9.65871	0.207689
1/2	9.46489	0.085069	9.57403	0.140625	9.66118	0.210069
17/32	9.46875	0.086595	9.57704	0.142585	9.66364	0.212463
9/16	9.47257	0.088135	9.58002	0.144558	9.66609	0.214871
19/32	9.47637	0.089688	9.58299	0 146545	9.66852	0.217292
5/8	9.48013	0.091254	9.58593	0.148546	9.67094	0.219727
21/32	9.48385	0.092834	9.58886	0.150560	9.67335	0.222175
11/16	9.48755	0.094428	9.59176	0.152588	9.67574	0.224637
23/32	9.49122	0.096035	9.59465	0.154629	9.67812	0.227112
3/4	9.49485	0.097656	9.59751	0.156684	9.68049	0.229601
25/32	9.49845	0.099291	9.60036	0.158752	9.68284	0.232103
13/16	9.50203	0.100939	9.60319	0.160834	9.68518	0.234619
27/32	9.50557	0.102600	9.60600	0.162930	9.68751	0.237149
7/8	9.50909	0.104275	9.60879	0.165039	9.68983	0.239692
29/32	9.51258	0.105964	9.61157	0.167162	9.69213	0.242249
15/16	9.51604	0.107666	9.61433	0.169298	9.69442	0.244819
31/32	9.51947	0.109382	9.61707	0.171448	9.69670	0.247403
1	9.52288	0.111111	9.61979	0.173611	9.69897	0.250000

0′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	9.69897	0.250000	9.76592	0.340278	9.82391	0.444444
1/32	9.70123	0.252611	9.76785	0.343323	9.82560	0.447923
1/16	9.70347	0.255235	9.76978	0.346381	9.82729	0.451416
3/32	9.70570	0.257874	9.77169	0.349453	9.82897	0.454922
⅛	9.70792	0.260525	9.77360	0.352539	9.83064	0.458442
5/32	9.71014	0.263190	9.77550	0.355638	9.83231	0.461975
3/16	9.71233	0.265869	9.77740	0.358751	9.83397	0.465522
7/32	9.71452	0.268561	9.77928	0.361877	9.83562	0.469082
¼	9.71670	0.271267	9.78116	0.365017	9.83727	0.472656
9/32	9.71886	0.273987	9.78302	0.368171	9.83891	0.476244
5/16	9.72102	0.276720	9.78488	0.371338	9.84055	0.479845
11/32	9.72316	0.279466	9.78674	0.374519	9.84218	0.483459
⅜	9.72530	0.282227	9.78858	0.377713	9.84380	0.487088
13/32	9.72742	0.285000	9.79042	0.380920	9.84542	0.490729
7/16	9.72954	0.287788	9.79225	0.384142	9.84703	0.494385
15/32	9.73164	0.290588	9.79407	0.387377	9.84864	0.498054
½	9.73373	0.293403	9.79588	0.390625	9.85024	0.501736
17/32	9.73582	0.296231	9.79769	0.393887	9.85183	0.505432
9/16	9.73789	0.299072	9.79948	0.397163	9.85342	0.509142
19/32	9.73995	0.301927	9.80128	0.400452	9.85500	0.512865
⅝	9.74200	0.304796	9.80306	0.403754	9.85658	0.516602
21/32	9.74405	0.307678	9.80483	0.407071	9.85815	0.520352
11/16	9.74608	0.310574	9.80660	0.410400	9.85971	0.524116
23/32	9.74811	0.313483	9.80837	0.413744	9.86127	0.527893
¾	9.75012	0.316406	9.81012	0.417101	9.86283	0.531684
25/32	9.75213	0.319343	9.81187	0.420471	9.86438	0.535489
13/16	9.75413	0.322293	9.81361	0.423855	9.86592	0.539307
27/32	9.75611	0.325256	9.81534	0.427253	9.86746	0.543138
⅞	9.75809	0.328234	9.81707	0.430664	9.86899	0.546984
29/32	9.76006	0.331224	9.81879	0.434089	9.87051	0.550842
15/16	9.76202	0.334229	9.82050	0.437527	9.87203	0.554715
31/32	9.76397	0.337246	9.82221	0.440979	9.87355	0.558601
1	9.76592	0.340278	9.82391	0.444444	9.87506	0.562500

0′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	9.87506	0.562500	9.92082	0.694444	9.96221	0.840278
1/32	9.87657	0.566413	9.92217	0.698792	9.96344	0.845059
1/16	9.87807	0.570340	9.92352	0.703152	9.96467	0.849854
3/32	9.87956	0.574280	9.92487	0.707526	9.96590	0.854662
1/8	9.88105	0.578234	9.92621	0.711914	9.96712	0.859484
5/32	9.88254	0.582201	9.92755	0.716315	9.96834	0.864319
3/16	9.88402	0.586182	9.92889	0.720730	9.96955	0.869168
7/32	9.88549	0.590176	9.93022	0.725159	9.97076	0.874030
1/4	9.88696	0.594184	9.93154	0.729601	9.97197	0.878906
9/32	9.88843	0.598206	9.93286	0.734056	9.97318	0.883796
5/16	9.88989	0.602241	9.93418	0.738525	9.97438	0.888699
11/32	9.89134	0.606289	9.93550	0.743008	9.97558	0.893616
3/8	9.89279	0.610352	9.93681	0.747504	9.97677	0.898546
13/32	9.89424	0.614427	9.93811	0.752014	9.97796	0.903490
7/16	9.89568	0.618517	9.93942	0.756538	9.97915	0.908447
15/32	9.89711	0.622620	9.94071	0.761074	9.98033	0.913418
1/2	9.89854	0.626736	9.94201	0.765625	9.98152	0.918403
17/32	9.89997	0.630866	9.94330	0.770189	9.98270	0.923401
9/16	9.90139	0.635010	9.94459	0.774767	9.98387	0.928413
19/32	9.90281	0.639167	9.94587	0.779358	9.98504	0.933438
5/8	9.90422	0.643338	9.94715	0.783963	9.98621	0.938477
21/32	9.90563	0.647522	9.94842	0.788581	9.98738	0.943529
11/16	9.90703	0.651720	9.94969	0.793213	9.98854	0.948595
23/32	9.90843	0.655931	9.95096	0.797858	9.98970	0.953674
3/4	9.90982	0.660156	9.95223	0.802517	9.99086	0.958767
25/32	9.91121	0.664395	9.95349	0.807190	9.99201	0.963874
13/16	9.91260	0.668647	9.95474	0.811876	9.99316	0.968994
27/32	9.91398	0.672913	9.95600	0.816576	9.99431	0.974128
7/8	9.91536	0.677192	9.95725	0.821289	9.99545	0.979275
29/32	9.91673	0.681485	9.95849	0.826016	9.99659	0.984436
15/16	9.91810	0.685791	9.95974	0.830756	9.99773	0.989610
31/32	9.91946	0.690111	9.96098	0.835510	9.99887	0.994798
1	9.92082	0.694444	9.96221	0.840278	0.00000	1.000000

1′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.00000	1.0000	0.03476	1.1736	0.06695	1.3611
1/32	0.00113	1.0052	0.03580	1.1793	0.06792	1.3672
1/16	0.00226	1.0104	0.03685	1.1849	0.06888	1.3733
3/32	0.00338	1.0157	0.03788	1.1906	0.06985	1.3794
1/8	0.00450	1.0209	0.03892	1.1963	0.07081	1.3855
5/32	0.00562	1.0262	0.03995	1.2020	0.07177	1.3917
3/16	0.00673	1.0315	0.04098	1.2077	0.07272	1.3978
7/32	0.00785	1.0368	0.04201	1.2134	0.07368	1.4040
1/4	0.00895	1.0421	0.04303	1.2192	0.07463	1.4102
9/32	0.01006	1.0474	0.04406	1.2249	0.07558	1.4163
5/16	0.01116	1.0528	0.04508	1.2307	0.07653	1.4226
11/32	0.01227	1.0581	0.04610	1.2365	0.07748	1.4288
3/8	0.01336	1.0635	0.04711	1.2423	0.07843	1.4350
13/32	0.01446	1.0689	0.04813	1.2481	0.07937	1.4413
7/16	0.01555	1.0742	0.04914	1.2539	0.08031	1.4475
15/32	0.01664	1.0797	0.05015	1.2598	0.08125	1.4538
1/2	0.01773	1.0851	0.05115	1.2656	0.08219	1.4601
17/32	0.01881	1.0905	0.05216	1.2715	0.08312	1.4664
9/16	0.01989	1.0959	0.05316	1.2774	0.08405	1.4727
19/32	0.02097	1.1014	0.05416	1.2833	0.08499	1.4790
5/8	0.02205	1.1069	0.05516	1.2892	0.08591	1.4854
21/32	0.02312	1.1124	0.05615	1.2951	0.08684	1.4917
11/16	0.02419	1.1179	0.05714	1.3010	0.08777	1.4981
23/32	0.02526	1.1234	0.05813	1.3070	0.08869	1.5045
3/4	0.02633	1.1289	0.05912	1.3129	0.08961	1.5109
25/32	0.02739	1.1344	0.06011	1.3189	0.09053	1.5173
13/16	0.02845	1.1400	0.06109	1.3249	0.09145	1.5237
27/32	0.02951	1.1456	0.06207	1.3309	0.09236	1.5301
7/8	0.03057	1.1511	0.06305	1.3369	0.09328	1.5366
29/32	0.03162	1.1567	0.06403	1.3429	0.09419	1.5430
15/16	0.03267	1.1624	0.06500	1.3490	0.09510	1.5495
31/32	0.03372	1.1680	0.06598	1.3550	0.09600	1.5560
1	0.03476	1.1736	0.06695	1.3611	0.09691	1.5625

1′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.09691	1.5625	0.12494	1.7778	0.15127	2.0069
1/32	0.09781	1.5690	0.12579	1.7847	0.15207	2.0143
1/16	0.09872	1.5755	0.12663	1.7917	0.15286	2.0217
3/32	0.09962	1.5821	0.12748	1.7987	0.15366	2.0291
1/8	0.10051	1.5887	0.12832	1.8057	0.15445	2.0366
5/32	0.10141	1.5952	0.12916	1.8127	0.15524	2.0440
3/16	0.10231	1.6018	0.13000	1.8197	0.15603	2.0515
7/32	0.10320	1.6084	0.13084	1.8267	0.15682	2.0589
1/4	0.10409	1.6150	0.13167	1.8338	0.15761	2.0664
9/32	0.10498	1.6216	0.13251	1.8408	0.15839	2.0739
5/16	0.10586	1.6283	0.13334	1.8479	0.15918	2.0814
11/32	0.10675	1.6349	0.13417	1.8550	0.15996	2.0889
3/8	0.10763	1.6416	0.13500	1.8621	0.16074	2.0965
13/32	0.10852	1.6483	0.13583	1.8692	0.16152	2.1040
7/16	0.10940	1.6550	0.13665	1.8763	0.16230	2.1116
15/32	0.11027	1.6617	0.13748	1.8835	0.16308	2.1191
1/2	0.11115	1.6684	0.13830	1.8906	0.16386	2.1267
17/32	0.11203	1.6751	0.13912	1.8978	0.16463	2.1343
9/16	0.11290	1.6819	0.13994	1.9050	0.16541	2.1420
19/32	0.11377	1.6886	0.14076	1.9122	0.16618	2.1496
5/8	0.11464	1.6954	0.14158	1.9194	0.16695	2.1572
21/32	0.11551	1.7022	0.14240	1.9266	0.16772	2.1649
11/16	0.11637	1.7090	0.14321	1.9338	0.16849	2.1726
23/32	0.11724	1.7158	0.14402	1.9411	0.16925	2.1802
3/4	0.11810	1.7227	0.14483	1.9484	0.17002	2.1879
25/32	0.11896	1.7295	0.14564	1.9556	0.17078	2.1956
13/16	0.11982	1.7364	0.14645	1.9629	0.17154	2.2034
27/32	0.12068	1.7432	0.14726	1.9702	0.17230	2.2111
7/8	0.12153	1.7501	0.14806	1.9775	0.17306	2.2189
29/32	0.12239	1.7570	0.14887	1.9849	0.17382	2.2266
15/16	0.12324	1.7639	0.14967	1.9922	0.17458	2.2344
31/32	0.12409	1.7708	0.15047	1.9996	0.17534	2.2422
1	0.12494	1.7778	0.15127	2.0069	0.17609	2.2500

1′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.17609	2.2500	0.19957	2.5069	0.22185	2.7778
1/32	0.17684	2.2578	0.20029	2.5152	0.22253	2.7865
1/16	0.17760	2.2657	0.20100	2.5235	0.22320	2.7952
3/32	0.17835	2.2735	0.20171	2.5317	0.22388	2.8039
1/8	0.17910	2.2814	0.20242	2.5400	0.22455	2.8126
5/32	0.17984	2.2892	0.20313	2.5483	0.22523	2.8214
3/16	0.18059	2.2971	0.20384	2.5567	0.22590	2.8301
7/32	0.18134	2.3050	0.20454	2.5650	0.22657	2.8389
1/4	0.18208	2.3129	0.20525	2.5734	0.22724	2.8477
9/32	0.18282	2.3209	0.20595	2.5817	0.22791	2.8565
5/16	0.18357	2.3288	0.20666	2.5901	0.22858	2.8653
11/32	0.18431	2.3368	0.20736	2.5985	0.22925	2.8741
3/8	0.18505	2.3447	0.20806	2.6069	0.22992	2.8829
13/32	0.18578	2.3527	0.20876	2.6153	0.23058	2.8918
7/16	0.18652	2.3607	0.20946	2.6237	0.23125	2.9006
15/32	0.18726	2.3687	0.21016	2.6322	0.23191	2.9095
1/2	0.18799	2.3767	0.21085	2.6406	0.23257	2.9184
17/32	0.18872	2.3848	0.21155	2.6491	0.23323	2.9273
9/16	0.18946	2.3928	0.21224	2.6576	0.23389	2.9362
19/32	0.19019	2.4009	0.21294	2.6661	0.23455	2.9452
5/8	0.19092	2.4090	0.21363	2.6746	0.23521	2.9541
21/32	0.19164	2.4171	0.21432	2.6831	0.23587	2.9631
11/16	0.19237	2.4252	0.21501	2.6917	0.23653	2.9720
23/32	0.19310	2.4333	0.21570	2.7002	0.23718	2.9810
3/4	0.19382	2.4414	0.21639	2.7088	0.23784	2.9900
25/32	0.19454	2.4496	0.21707	2.7173	0.23849	2.9990
13/16	0.19527	2.4577	0.21776	2.7259	0.23914	3.0081
27/32	0.19599	2.4659	0.21844	2.7345	0.23979	3.0171
7/8	0.19671	2.4741	0.21913	2.7432	0.24045	3.0262
29/32	0.19742	2.4823	0.21981	2.7518	0.24109	3.0352
15/16	0.19814	2.4905	0.22049	2.7604	0.24174	3.0443
31/32	0.19886	2.4987	0.22117	2.7691	0.24239	3.0534
1	0.19957	2.5069	0.22185	2.7778	0.24304	3.0625

1′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.24304	3.0625	0.26324	3.3611	0.28255	3.6736
1/32	0.24368	3.0716	0.26386	3.3707	0.28314	3.6836
1/16	0.24433	3.0808	0.26447	3.3802	0.28373	3.6936
3/32	0.24497	3.0899	0.26509	3.3898	0.28431	3.7036
1/8	0.24562	3.0991	0.26570	3.3994	0.28490	3.7137
5/32	0.24626	3.1082	0.26632	3.4090	0.28549	3.7237
3/16	0.24690	3.1174	0.26693	3.4186	0.28607	3.7338
7/32	0.24754	3.1266	0.26754	3.4283	0.28666	3.7438
1/4	0.24818	3.1359	0.26815	3.4379	0.28724	3.7539
9/32	0.24882	3.1451	0.26876	3.4476	0.28783	3.7640
5/16	0.24945	3.1543	0.26937	3.4573	0.28841	3.7741
11/32	0.25009	3.1636	0.26997	3.4670	0.28899	3.7842
3/8	0.25072	3.1729	0.27058	3.4767	0.28957	3.7944
13/32	0.25136	3.1821	0.27119	3.4864	0.29015	3.8045
7/16	0.25199	3.1914	0.27179	3.4961	0.29073	3.8147
15/32	0.25263	3.2007	0.27240	3.5059	0.29131	3.8249
1/2	0.25326	3.2101	0.27300	3.5156	0.29189	3.8351
17/32	0.25389	3.2194	0.27360	3.5254	0.29246	3.8453
9/16	0.25452	3.2288	0.27421	3.5352	0.29304	3.8555
19/32	0.25515	3.2381	0.27481	3.5450	0.29362	3.8657
5/8	0.25577	3.2475	0.27541	3.5548	0.29419	3.8760
21/32	0.25640	3.2569	0.27601	3.5646	0.29476	3.8862
11/16	0.25703	3.2663	0.27661	3.5745	0.29534	3.8965
23/32	0.25765	3.2757	0.27720	3.5843	0.29591	3.9068
3/4	0.25828	3.2852	0.27780	3.5942	0.29648	3.9171
25/32	0.25890	3.2946	0.27840	3.6041	0.29705	3.9274
13/16	0.25952	3.3041	0.27899	3.6140	0.29762	3.9377
27/32	0.26015	3.3135	0.27959	3.6239	0.29819	3.9481
7/8	0.26077	3.3230	0.28018	3.6338	0.29876	3.9584
29/32	0.26139	3.3325	0.28077	3.6437	0.29933	3.9688
15/16	0.26201	3.3420	0.28136	3.6537	0.29990	3.9792
31/32	0.26262	3.3516	0.28196	3.6636	0.30046	3.9896
1	0.26324	3.3611	0.28255	3.6736	0.30103	4.0000

2′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.30103	4.0000	0.31876	4.3403	0.33579	4.6944
1/32	0.30160	4.0104	0.31930	4.3511	0.33631	4.7057
1/16	0.30216	4.0209	0.31984	4.3620	0.33683	4.7170
3/32	0.30272	4.0313	0.32038	4.3729	0.33736	4.7284
1/8	0.30329	4.0418	0.32092	4.3838	0.33788	4.7397
5/32	0.30385	4.0523	0.32146	4.3947	0.33839	4.7510
3/16	0.30441	4.0627	0.32200	4.4056	0.33891	4.7624
7/32	0.30497	4.0732	0.32254	4.4166	0.33943	4.7738
1/4	0.30553	4.0838	0.32308	4.4275	0.33995	4.7852
9/32	0.30609	4.0943	0.32362	4.4385	0.34046	4.7966
5/16	0.30665	4.1048	0.32415	4.4495	0.34098	4.8080
11/32	0.30721	4.1154	0.32469	4.4605	0.34150	4.8194
3/8	0.30776	4.1260	0.32522	4.4715	0.34201	4.8308
13/32	0.30832	4.1366	0.32576	4.4825	0.34253	4.8423
7/16	0.30888	4.1472	0.32629	4.4935	0.34304	4.8538
15/32	0.30943	4.1578	0.32683	4.5046	0.34355	4.8652
1/2	0.30998	4.1684	0.32736	4.5156	0.34406	4.8767
17/32	0.31054	4.1790	0.32789	4.5267	0.34458	4.8882
9/16	0.31109	4.1897	0.32842	4.5378	0.34509	4.8998
19/32	0.31164	4.2004	0.32895	4.5489	0.34560	4.9113
5/8	0.31219	4.2110	0.32948	4.5600	0.34611	4.9229
21/32	0.31275	4.2217	0.33001	4.5711	0.34662	4.9344
11/16	0.31330	4.2324	0.33054	4.5823	0.34713	4.9460
23/32	0.31385	4.2432	0.33107	4.5934	0.34763	4.9576
3/4	0.31439	4.2539	0.33160	4.6046	0.34814	4.9692
25/32	0.31494	4.2647	0.33212	4.6158	0.34865	4.9808
13/16	0.31549	4.2754	0.33265	4.6270	0.34916	4.9924
27/32	0.31604	4.2862	0.33317	4.6382	0.34966	5.0041
7/8	0.31658	4.2970	0.33370	4.6494	0.35017	5.0157
29/32	0.31713	4.3078	0.33422	4.6607	0.35067	5.0274
15/16	0.31767	4.3186	0.33475	4.6719	0.35118	5.0391
31/32	0.31822	4.3294	0.33527	4.6832	0.35168	5.0508
1	0.31876	4.3403	0.33579	4.6944	0.35218	5.0625

2′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.35218	5.0625	0.36798	5.4444	0.38322	5.8403
1/32	0.35268	5.0742	0.36846	5.4566	0.38368	5.8529
1/16	0.35319	5.0860	0.36895	5.4688	0.38415	5.8655
3/32	0.35369	5.0977	0.36943	5.4810	0.38462	5.8781
⅛	0.35419	5.1095	0.36991	5.4932	0.38508	5.8907
5/32	0.35469	5.1213	0.37039	5.5054	0.38555	5.9034
3/16	0.35519	5.1331	0.37088	5.5176	0.38602	5.9160
7/32	0.35569	5.1449	0.37136	5.5298	0.38648	5.9287
¼	0.35619	5.1567	0.37184	5.5421	0.38694	5.9414
9/32	0.35668	5.1685	0.37232	5.5544	0.38741	5.9541
5/16	0.35718	5.1804	0.37280	5.5667	0.38787	5.9668
11/32	0.35768	5.1922	0.37328	5.5789	0.38833	5.9796
⅜	0.35817	5.2041	0.37375	5.5913	0.38880	5.9923
13/32	0.35867	5.2160	0.37423	5.6036	0.38926	6.0051
7/16	0.35916	5.2279	0.37471	5.6159	0.38972	6.0178
15/32	0.35966	5.2398	0.37519	5.6283	0.39018	6.0306
½	0.36015	5.2517	0.37566	5.6406	0.39064	6.0434
17/32	0.36064	5.2637	0.37614	5.6530	0.39110	6.0562
9/16	0.36114	5.2756	0.37661	5.6654	0.39156	6.0690
19/32	0.36163	5.2876	0.37709	5.6778	0.39202	6.0819
⅝	0.36212	5.2996	0.37756	5.6902	0.39248	6.0947
21/32	0.36261	5.3116	0.37804	5.7026	0.39293	6.1076
11/16	0.36310	5.3236	0.37851	5.7151	0.39339	6.1205
23/32	0.36359	5.3356	0.37898	5.7275	0.39385	6.1334
¾	0.36408	5.3477	0.37946	5.7400	0.39431	6.1463
25/32	0.36457	5.3597	0.37993	5.7525	0.39476	6.1592
13/16	0.36506	5.3718	0.38040	5.7650	0.39522	6.1721
27/32	0.36555	5.3839	0.38087	5.7775	0.39567	6.1851
⅞	0.36603	5.3959	0.38134	5.7900	0.39613	6.1980
29/32	0.36652	5.4080	0.38181	5.8026	0.39658	6.2110
15/16	0.36701	5.4202	0.38228	5.8151	0.39703	6.2240
31/32	0.36749	5.4323	0.38275	5.8277	0.39749	6.2370
1	0.36798	5.4444	0.38322	5.8403	0.39794	6.2500

2′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.39794	6.2500	0.41218	6.6736	0.42597	7.1111
1/32	0.39839	6.2630	0.41262	6.6871	0.42639	7.1250
1/16	0.39884	6.2761	0.41306	6.7005	0.42682	7.1389
3/32	0.39930	6.2891	0.41349	6.7140	0.42724	7.1528
1/8	0.39975	6.3022	0.41393	6.7275	0.42766	7.1668
5/32	0.40020	6.3153	0.41436	6.7411	0.42808	7.1807
3/16	0.40065	6.3284	0.41480	6.7546	0.42851	7.1947
7/32	0.40110	6.3415	0.41523	6.7681	0.42893	7.2087
1/4	0.40154	6.3546	0.41567	6.7817	0.42935	7.2227
9/32	0.40199	6.3677	0.41610	6.7953	0.42977	7.2367
5/16	0.40244	6.3809	0.41654	6.8088	0.43019	7.2507
11/32	0.40289	6.3940	0.41697	6.8224	0.43061	7.2647
3/8	0.40334	6.4072	0.41740	6.8360	0.43103	7.2788
13/32	0.40378	6.4204	0.41783	6.8497	0.43145	7.2928
7/16	0.40423	6.4336	0.41827	6.8633	0.43187	7.3069
15/32	0.40467	6.4468	0.41870	6.8770	0.43228	7.3210
1/2	0.40512	6.4601	0.41913	6.8906	0.43270	7.3351
17/32	0.40556	6.4733	0.41956	6.9043	0.43312	7.3492
9/16	0.40601	6.4866	0.41999	6.9180	0.43354	7.3633
19/32	0.40645	6.4998	0.42042	6.9317	0.43395	7.3774
5/8	0.40689	6.5131	0.42085	6.9454	0.43437	7.3916
21/32	0.40734	6.5264	0.42128	6.9592	0.43479	7.4058
11/16	0.40778	6.5397	0.42171	6.9729	0.43520	7.4199
23/32	0.40822	6.5531	0.42213	6.9867	0.43562	7.4341
3/4	0.40866	6.5664	0.42256	7.0004	0.43603	7.4484
25/32	0.40911	6.5798	0.42299	7.0142	0.43644	7.4626
13/16	0.40955	6.5931	0.42342	7.0280	0.43686	7.4768
27/32	0.40999	6.6065	0.42384	7.0418	0.43727	7.4911
7/8	0.41043	6.6199	0.42427	7.0557	0.43768	7.5053
29/32	0.41087	6.6333	0.42469	7.0695	0.43810	7.5196
15/16	0.41130	6.6467	0.42512	7.0834	0.43851	7.5339
31/32	0.41174	6.6602	0.42554	7.0972	0.43892	7.5482
1	0.41218	6.6736	0.42597	7.1111	0.43933	7.5625

2′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.43933	7.5625	0.45230	8.0278	0.46489	8.5069
1/32	0.43974	7.5768	0.45270	8.0425	0.46527	8.5221
1/16	0.44015	7.5912	0.45310	8.0573	0.46566	8.5374
3/32	0.44056	7.6055	0.45349	8.0721	0.46605	8.5526
1/8	0.44097	7.6199	0.45389	8.0869	0.46644	8.5678
5/32	0.44138	7.6343	0.45429	8.1017	0.46682	8.5831
3/16	0.44179	7.6487	0.45469	8.1166	0.46721	8.5983
7/32	0.44220	7.6631	0.45508	8.1314	0.46759	8.6136
1/4	0.44261	7.6775	0.45548	8.1463	0.46798	8.6289
9/32	0.44302	7.6920	0.45588	8.1611	0.46836	8.6442
5/16	0.44343	7.7064	0.45627	8.1760	0.46875	8.6595
11/32	0.44383	7.7209	0.45667	8.1909	0.46913	8.6749
3/8	0.44424	7.7354	0.45706	8.2058	0.46952	8.6902
13/32	0.44465	7.7498	0.45746	8.2208	0.46990	8.7056
7/16	0.44505	7.7643	0.45785	8.2357	0.47028	8.7209
15/32	0.44546	7.7789	0.45824	8.2507	0.47066	8.7363
1/2	0.44586	7.7934	0.45864	8.2656	0.47105	8.7517
17/32	0.44627	7.8079	0.45903	8.2806	0.47143	8.7672
9/16	0.44667	7.8225	0.45942	8.2956	0.47181	8.7826
19/32	0.44708	7.8371	0.45982	8.3106	0.47219	8.7980
5/8	0.44748	7.8517	0.46021	8.3256	0.47257	8.8135
21/32	0.44788	7.8663	0.46060	8.3407	0.47295	8.8289
11/16	0.44829	7.8809	0.46099	8.3557	0.47333	8.8444
23/32	0.44869	7.8955	0.46138	8.3708	0.47372	8.8599
3/4	0.44909	7.9102	0.46177	8.3859	0.47409	8.8754
25/32	0.44949	7.9248	0.46216	8.4009	0.47447	8.8910
13/16	0.44990	7.9395	0.46255	8.4160	0.47485	8.9065
27/32	0.45030	7.9542	0.46294	8.4312	0.47523	8.9220
7/8	0.45070	7.9689	0.46333	8.4463	0.47561	8.9376
29/32	0.45110	7.9836	0.46372	8.4614	0.47599	8.9532
15/16	0.45150	7.9983	0.46411	8.4766	0.47637	8.9688
31/32	0.45190	8.0130	0.46450	8.4918	0.47674	8.9844
1	0.45230	8.0278	0.46489	8.5069	0.47712	9.0000

3′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.47712	9.0000	0.48902	9.5069	0.50060	10.0278
1/32	0.47750	9.0156	0.48939	9.5230	0.50096	10.0443
1/16	0.47787	9.0313	0.48975	9.5391	0.50132	10.0608
3/32	0.47825	9.0469	0.49012	9.5552	0.50167	10.0773
1/8	0.47863	9.0626	0.49049	9.5713	0.50203	10.0939
5/32	0.47900	9.0783	0.49085	9.5874	0.50238	10.1104
3/16	0.47938	9.0940	0.49122	9.6035	0.50274	10.1270
7/32	0.47975	9.1097	0.49158	9.6197	0.50310	10.1436
1/4	0.48013	9.1254	0.49195	9.6359	0.50345	10.1602
9/32	0.48050	9.1412	0.49231	9.6520	0.50380	10.1768
5/16	0.48087	9.1569	0.49267	9.6682	0.50416	10.1934
11/32	0.48125	9.1727	0.49304	9.6844	0.50451	10.2100
3/8	0.48162	9.1885	0.49340	9.7006	0.50487	10.2267
13/32	0.48199	9.2043	0.49376	9.7169	0.50522	10.2433
7/16	0.48237	9.2201	0.49413	9.7331	0.50557	10.2600
15/32	0.48274	9.2359	0.49449	9.7494	0.50593	10.2767
1/2	0.48311	9.2517	0.49485	9.7656	0.50628	10.2934
17/32	0.48348	9.2676	0.49521	9.7819	0.50663	10.3101
9/16	0.48385	9.2834	0.49557	9.7982	0.50698	10.3269
19/32	0.48423	9.2993	0.49593	9.8145	0.50734	10.3436
5/8	0.48460	9.3152	0.49630	9.8308	0.50769	10.3604
21/32	0.48497	9.3311	0.49666	9.8472	0.50804	10.3771
11/16	0.48534	9.3470	0.49702	9.8635	0.50839	10.3939
23/32	0.48571	9.3630	0.49738	9.8799	0.50874	10.4107
3/4	0.48608	9.3789	0.49774	9.8963	0.50909	10.4275
25/32	0.48645	9.3949	0.49810	9.9127	0.50944	10.4443
13/16	0.48681	9.4108	0.49845	9.9291	0.50979	10.4612
27/32	0.48718	9.4268	0.49881	9.9455	0.51014	10.4780
7/8	0.48755	9.4428	0.49917	9.9619	0.51049	10.4949
29/32	0.48792	9.4588	0.49953	9.9784	0.51084	10.5118
15/16	0.48829	9.4749	0.49989	9.9948	0.51119	10.5287
31/32	0.48865	9.4909	0.50025	10.0113	0.51154	10.5456
1	0.48902	9.5069	0.50060	10.0278	0.51188	10.5625

3′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.51188	10.5625	0.52288	11.1111	0.53360	11.6736
1/32	0.51223	10.5794	0.52322	11.1285	0.53393	11.6914
1/16	0.51258	10.5964	0.52356	11.1459	0.53426	11.7092
3/32	0.51293	10.6133	0.52390	11.1633	0.53459	11.7271
1/8	0.51327	10.6303	0.52423	11.1807	0.53492	11.7449
5/32	0.51362	10.6473	0.52457	11.1981	0.53525	11.7628
3/16	0.51397	10.6643	0.52491	11.2155	0.53558	11.7806
7/32	0.51431	10.6813	0.52525	11.2330	0.53591	11.7985
1/4	0.51466	10.6984	0.52558	11.2504	0.53624	11.8164
9/32	0.51500	10.7154	0.52592	11.2679	0.53657	11.8343
5/16	0.51535	10.7324	0.52626	11.2854	0.53690	11.8522
11/32	0.51569	10.7495	0.52660	11.3029	0.53723	11.8702
3/8	0.51604	10.7666	0.52693	11.3204	0.53756	11.8881
13/32	0.51638	10.7837	0.52727	11.3380	0.53788	11.9061
7/16	0.51673	10.8008	0.52760	11.3555	0.53821	11.9241
15/32	0.51707	10.8179	0.52794	11.3731	0.53854	11.9421
1/2	0.51742	10.8351	0.52827	11.3906	0.53887	11.9601
17/32	0.51776	10.8522	0.52861	11.4082	0.53919	11.9781
9/16	0.51810	10.8694	0.52894	11.4258	0.53952	11.9961
19/32	0.51845	10.8866	0.52928	11.4434	0.53985	12.0142
5/8	0.51879	10.9038	0.52961	11.4610	0.54017	12.0322
21/32	0.51913	10.9210	0.52995	11.4787	0.54050	12.0503
11/16	0.51947	10.9382	0.53028	11.4963	0.54082	12.0684
23/32	0.51981	10.9554	0.53061	11.5140	0.54115	12.0865
3/4	0.52016	10.9727	0.53095	11.5317	0.54148	12.1046
25/32	0.52050	10.9899	0.53128	11.5494	0.54180	12.1227
13/16	0.52084	11.0072	0.53161	11.5671	0.54212	12.1409
27/32	0.52118	11.0245	0.53194	11.5848	0.54245	12.1590
7/8	0.52152	11.0418	0.53228	11.6025	0.54277	12.1772
29/32	0.52186	11.0591	0.53261	11.6203	0.54310	12.1954
15/16	0.52220	11.0764	0.53294	11.6380	0.54342	12.2136
31/32	0.52254	11.0938	0.53327	11.6558	0.54374	12.2318
1	0.52288	11.1111	0.53360	11.6736	0.54407	12.2500

3′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.54407	12.2500	0.55429	12.8403	0.56427	13.4444
1/32	0.54439	12.2682	0.55460	12.8589	0.56458	13.4635
1/16	0.54471	12.2865	0.55492	12.8776	0.56489	13.4827
3/32	0.54504	12.3047	0.55523	12.8963	0.56520	13.5018
1/8	0.54536	12.3230	0.55555	12.9150	0.56550	13.5209
5/32	0.54568	12.3413	0.55586	12.9338	0.56581	13.5401
3/16	0.54600	12.3596	0.55618	12.9525	0.56612	13.5593
7/32	0.54632	12.3779	0.55649	12.9713	0.56643	13.5785
1/4	0.54665	12.3963	0.55680	12.9900	0.56673	13.5977
9/32	0.54697	12.4146	0.55712	13.0088	0.56704	13.6169
5/16	0.54729	12.4330	0.55743	13.0276	0.56735	13.6361
11/32	0.54761	12.4513	0.55775	13.0464	0.56765	13.6553
3/8	0.54793	12.4697	0.55806	13.0652	0.56796	13.6746
13/32	0.54825	12.4881	0.55837	13.0840	0.56826	13.6939
7/16	0.54857	12.5065	0.55868	13.1029	0.56857	13.7131
15/32	0.54889	12.5250	0.55900	13.1218	0.56887	13.7324
1/2	0.54921	12.5434	0.55931	13.1406	0.56918	13.7517
17/32	0.54953	12.5619	0.55962	13.1595	0.56948	13.7711
9/16	0.54985	12.5803	0.55993	13.1784	0.56979	13.7904
19/32	0.55016	12.5988	0.56024	13.1973	0.57009	13.8097
5/8	0.55048	12.6173	0.56055	13.2163	0.57040	13.8291
21/32	0.55080	12.6358	0.56087	13.2352	0.57070	13.8485
11/16	0.55112	12.6543	0.56118	13.2542	0.57100	13.8679
23/32	0.55144	12.6729	0.56149	13.2731	0.57131	13.8873
3/4	0.55175	12.6914	0.56180	13.2921	0.57161	13.9067
25/32	0.55207	12.7100	0.56211	13.3111	0.57191	13.9261
13/16	0.55239	12.7285	0.56242	13.3301	0.57222	13.9456
27/32	0.55271	12.7471	0.56273	13.3491	0.57252	13.9650
7/8	0.55302	12.7657	0.56304	13.3682	0.57282	13.9845
29/32	0.55334	12.7843	0.56335	13.3872	0.57313	14.0040
15/16	0.55366	12.8030	0.56365	13.4063	0.57343	14.0235
31/32	0.55397	12.8216	0.56396	13.4254	0.57373	14.0430
1	0.55429	12.8403	0.56427	13.4444	0.57403	14.0625

3

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.57403	14.0625	0.58358	14.6944	0.59292	15.3403
1/32	0.57433	14.0820	0.58387	14.7144	0.59321	15.3607
1/16	0.57463	14.1016	0.58417	14.7344	0.59349	15.3811
3/32	0.57494	14.1212	0.58446	14.7544	0.59378	15.4015
1/8	0.57524	14.1407	0.58476	14.7744	0.59407	15.4220
5/32	0.57554	14.1603	0.58505	14.7944	0.59436	15.4424
3/16	0.57584	14.1799	0.58534	14.8145	0.59465	15.4629
7/32	0.57614	14.1996	0.58564	14.8345	0.59493	15.4834
1/4	0.57644	14.2192	0.58593	14.8546	0.59522	15.5039
9/32	0.57674	14.2388	0.58622	14.8747	0.59551	15.5244
5/16	0.57704	14.2585	0.58652	14.8948	0.59579	15.5449
11/32	0.57734	14.2782	0.58681	14.9149	0.59608	15.5655
3/8	0.57764	14.2979	0.58710	14.9350	0.59637	15.5860
13/32	0.57793	14.3176	0.58740	14.9551	0.59665	15.6066
7/16	0.57823	14.3373	0.58769	14.9753	0.59694	15.6272
15/32	0.57853	14.3570	0.58798	14.9954	0.59723	15.6478
1/2	0.57883	14.3767	0.58827	15.0156	0.59751	15.6684
17/32	0.57913	14.3965	0.58856	15.0358	0.59780	15.6890
9/16	0.57943	14.4163	0.58886	15.0560	0.59808	15.7097
19/32	0.57972	14.4360	0.58915	15.0762	0.59837	15.7303
5/8	0.58002	14.4558	0.58944	15.0965	0.59865	15.7510
21/32	0.58032	14.4756	0.58973	15.1167	0.59894	15.7717
11/16	0.58062	14.4955	0.59002	15.1370	0.59922	15.7923
23/32	0.58091	14.5153	0.59031	15.1572	0.59951	15.8130
3/4	0.58121	14.5352	0.59060	15.1775	0.59979	15.8338
25/32	0.58151	14.5550	0.59089	15.1978	0.60008	15.8545
13/16	0.58180	14.5749	0.59118	15.2181	0.60036	15.8752
27/32	0.58210	14.5948	0.59147	15.2385	0.60064	15.8960
7/8	0.58239	14.6147	0.59176	15.2588	0.60093	15.9168
29/32	0.58269	14.6346	0.59205	15.2791	0.60121	15.9376
15/16	0.58299	14.6545	0.59234	15.2995	0.60149	15.9584
31/32	0.58328	14.6745	0.59263	15.3199	0.60178	15.9792
1	0.58358	14.6944	0.59292	15.3403	0.60206	16.0000

4′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.60206	16.0000	0.61101	16.6736	0.61979	17.3611
1/32	0.60234	16.0208	0.61129	16.6949	0.62006	17.3828
1/16	0.60263	16.0417	0.61157	16.7162	0.62033	17.4045
3/32	0.60291	16.0626	0.61184	16.7375	0.62060	17.4263
1/8	0.60319	16.0834	0.61212	16.7588	0.62087	17.4480
5/32	0.60347	16.1043	0.61240	16.7801	0.62114	17.4698
3/16	0.60375	16.1252	0.61267	16.8015	0.62141	17.4916
7/32	0.60403	16.1462	0.61295	16.8228	0.62168	17.5134
1/4	0.60432	16.1671	0.61322	16.8442	0.62195	17.5352
9/32	0.60460	16.1880	0.61350	16.8656	0.62222	17.5570
5/16	0.60488	16.2090	0.61378	16.8870	0.62249	17.5788
11/32	0.60516	16.2300	0.61405	16.9084	0.62276	17.6006
3/8	0.60544	16.2510	0.61433	16.9298	0.62303	17.6225
13/32	0.60572	16.2720	0.61460	16.9512	0.62330	17.6444
7/16	0.60600	16.2930	0.61488	16.9727	0.62357	17.6663
15/32	0.60628	16.3140	0.61515	16.9941	0.62384	17.6882
1/2	0.60656	16.3351	0.61542	17.0156	0.62411	17.7101
17/32	0.60684	16.3561	0.61570	17.0371	0.62438	17.7320
9/16	0.60712	16.3772	0.61597	17.0586	0.62465	17.7539
19/32	0.60740	16.3983	0.61625	17.0801	0.62492	17.7759
5/8	0.60768	16.4194	0.61652	17.1017	0.62518	17.7979
21/32	0.60796	16.4405	0.61679	17.1232	0.62545	17.8198
11/16	0.60824	16.4616	0.61707	17.1448	0.62572	17.8418
23/32	0.60851	16.4828	0.61734	17.1663	0.62599	17.8638
3/4	0.60879	16.5039	0.61761	17.1879	0.62625	17.8859
25/32	0.60907	16.5251	0.61788	17.2095	0.62652	17.9079
13/16	0.60935	16.5463	0.61816	17.2311	0.62679	17.9299
27/32	0.60963	16.5674	0.61843	17.2528	0.62706	17.9520
7/8	0.60991	16.5886	0.61870	17.2744	0.62732	17.9741
29/32	0.61018	16.6099	0.61897	17.2961	0.62759	17.9962
15/16	0.61046	16.6311	0.61925	17.3177	0.62786	18.0183
31/32	0.61074	16.6524	0.61952	17.3394	0.62812	18.0404
1	0.61101	16.6736	0.61979	17.3611	0.62839	18.0625

4′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.62839	18.0625	0.63682	18.7778	0.64509	19.5069
1/32	0.62865	18.0846	0.63708	18.8004	0.64535	19.5300
1/16	0.62892	18.1068	0.63734	18.8229	0.64561	19.5530
3/32	0.62919	18.1290	0.63760	18.8455	0.64586	19.5760
1/8	0.62945	18.1512	0.63786	18.8682	0.64612	19.5991
5/32	0.62972	18.1733	0.63813	18.8908	0.64637	19.6221
3/16	0.62998	18.1956	0.63839	18.9134	0.64663	19.6452
7/32	0.63025	18.2178	0.63865	18.9361	0.64688	19.6683
1/4	0.63051	18.2400	0.63891	18.9588	0.64714	19.6914
9/32	0.63078	18.2623	0.63916	18.9815	0.64739	19.7145
5/16	0.63104	18.2845	0.63942	19.0042	0.64765	19.7377
11/32	0.63131	18.3068	0.63968	19.0269	0.64790	19.7608
3/8	0.63157	18.3291	0.63994	19.0496	0.64816	19.7840
13/32	0.63183	18.3514	0.64020	19.0723	0.64841	19.8071
7/16	0.63210	18.3737	0.64046	19.0951	0.64866	19.8303
15/32	0.63236	18.3961	0.64072	19.1178	0.64892	19.8535
1/2	0.63263	18.4184	0.64098	19.1406	0.64917	19.8767
17/32	0.63289	18.4408	0.64124	19.1634	0.64943	19.9000
9/16	0.63315	18.4631	0.64149	19.1862	0.64968	19.9232
19/32	0.63342	18.4855	0.64175	19.2090	0.64993	19.9465
5/8	0.63368	18.5079	0.64201	19.2319	0.65019	19.9697
21/32	0.63394	18.5303	0.64227	19.2547	0.65044	19.9930
11/16	0.63420	18.5528	0.64253	19.2776	0.65069	20.0163
23/32	0.63447	18.5752	0.64278	19.3005	0.65094	20.0396
3/4	0.63473	18.5977	0.64304	19.3234	0.65120	20.0629
25/32	0.63499	18.6201	0.64330	19.3463	0.65145	20.0863
13/16	0.63525	18.6426	0.64356	19.3692	0.65170	20.1096
27/32	0.63552	18.6651	0.64381	19.3921	0.65195	20.1330
7/8	0.63578	18.6876	0.64407	19.4150	0.65221	20.1564
29/32	0.63604	18.7101	0.64433	19.4380	0.65246	20.1797
15/16	0.63630	18.7327	0.64458	19.4610	0.65271	20.2032
31/32	0.63656	18.7552	0.64484	19.4839	0.65296	20.2266
1	0.63682	18.7778	0.64509	19.5069	0.65321	20.2500

4′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.65321	20.2500	0.66118	21.0069	0.66901	21.7778
1/32	0.65346	20.2734	0.66143	21.0308	0.66925	21.8021
1/16	0.65371	20.2969	0.66167	21.0547	0.66949	21.8264
3/32	0.65397	20.3204	0.66192	21.0786	0.66973	21.8508
1/8	0.65422	20.3439	0.66217	21.1025	0.66998	21.8751
5/32	0.65447	20.3674	0.66241	21.1265	0.67022	21.8995
3/16	0.65472	20.3909	0.66266	21.1504	0.67046	21.9239
7/32	0.65497	20.4144	0.66291	21.1744	0.67070	21.9482
1/4	0.65522	20.4379	0.66315	21.1984	0.67094	21.9727
9/32	0.65547	20.4615	0.66340	21.2223	0.67118	21.9971
5/16	0.65572	20.4851	0.66364	21.2463	0.67142	22.0215
11/32	0.65597	20.5086	0.66389	21.2704	0.67166	22.0460
3/8	0.65622	20.5322	0.66413	21.2944	0.67191	22.0704
13/32	0.65647	20.5558	0.66438	21.3184	0.67215	22.0949
7/16	0.65672	20.5795	0.66462	21.3425	0.67239	22.1194
15/32	0.65697	20.6031	0.66487	21.3665	0.67263	22.1439
1/2	0.65722	20.6267	0.66511	21.3906	0.67287	22.1684
17/32	0.65746	20.6504	0.66536	21.4147	0.67311	22.1929
9/16	0.65771	20.6741	0.66560	21.4388	0.67335	22.2175
19/32	0.65796	20.6978	0.66584	21.4630	0.67359	22.2420
5/8	0.65821	20.7215	0.66609	21.4871	0.67383	22.2666
21/32	0.65846	20.7452	0.66633	21.5112	0.67407	22.2912
11/16	0.65871	20.7689	0.66658	21.5354	0.67431	22.3158
23/32	0.65895	20.7927	0.66682	21.5596	0.67455	22.3404
3/4	0.65920	20.8164	0.66706	21.5838	0.67478	22.3650
25/32	0.65945	20.8402	0.66731	21.6080	0.67502	22.3897
13/16	0.65970	20.8640	0.66755	21.6322	0.67526	22.4143
27/32	0.65995	20.8878	0.66779	21.6564	0.67550	22.4390
7/8	0.66019	20.9116	0.66804	21.6807	0.67574	22.4637
29/32	0.66044	20.9354	0.66828	21.7049	0.67598	22.4883
15/16	0.66069	20.9592	0.66852	21.7292	0.67622	22.5130
31/32	0.66093	20.9831	0.66876	21.7535	0.67646	22.5378
1	0.66118	21.0069	0.66901	21.7778	0.67669	22.5625

4′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.67669	22.5625	0.68425	23.3611	0.69167	24.1736
1/32	0.67693	22.5872	0.68448	23.3863	0.69190	24.1992
1/16	0.67717	22.6120	0.68471	23.4115	0.69213	24.2249
3/32	0.67741	22.6368	0.68495	23.4367	0.69236	24.2505
1/8	0.67764	22.6616	0.68518	23.4619	0.69259	24.2762
5/32	0.67788	22.6864	0.68542	23.4871	0.69282	24.3018
3/16	0.67812	22.7112	0.68565	23.5124	0.69305	24.3275
7/32	0.67836	22.7360	0.68588	23.5377	0.69328	24.3532
1/4	0.67859	22.7609	0.68611	23.5629	0.69351	24.3789
9/32	0.67883	22.7857	0.68635	23.5882	0.69374	24.4046
5/16	0.67907	22.8106	0.68658	23.6135	0.69396	24.4304
11/32	0.67930	22.8355	0.68681	23.6388	0.69419	24.4561
3/8	0.67954	22.8604	0.68705	23.6642	0.69442	24.4819
13/32	0.67978	22.8853	0.68728	23.6895	0.69465	24.5077
7/16	0.68001	22.9102	0.68751	23.7149	0.69488	24.5334
15/32	0.68025	22.9351	0.68774	23.7402	0.69511	24.5593
1/2	0.68049	22.9601	0.68797	23.7656	0.69534	24.5851
17/32	0.68072	22.9850	0.68821	23.7910	0.69556	24.6109
9/16	0.68096	23.0100	0.68844	23.8164	0.69579	24.6367
19/32	0.68119	23.0350	0.68867	23.8419	0.69602	24.6626
5/8	0.68143	23.0600	0.68890	23.8673	0.69625	24.6885
21/32	0.68167	23.0850	0.68913	23.8927	0.69647	24.7144
11/16	0.68190	23.1101	0.68936	23.9182	0.69670	24.7403
23/32	0.68214	23.1351	0.68960	23.9437	0.69693	24.7662
3/4	0.68237	23.1602	0.68983	23.9692	0.69716	24.7921
25/32	0.68261	23.1852	0.69006	23.9947	0.69738	24.8180
13/16	0.68284	23.2103	0.69029	24.0202	0.69761	24.8440
27/32	0.68308	23.2354	0.69052	24.0457	0.69784	24.8700
7/8	0.68331	23.2605	0.69075	24.0713	0.69806	24.8959
29/32	0.68354	23.2857	0.69098	24.0968	0.69829	24.9219
15/16	0.68378	23.3108	0.69121	24.1224	0.69852	24.9479
31/32	0.68401	23.3359	0.69144	24.1480	0.69874	24.9740
1	0.68425	23.3611	0.69167	24.1736	0.69897	25.0000

5′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.69897	25.0000	0.70615	25.8403	0.71321	26.6944
1/32	0.69920	25.0260	0.70637	25.8668	0.71343	26.7214
1/16	0.69942	25.0521	0.70659	25.8933	0.71365	26.7483
3/32	0.69965	25.0782	0.70682	25.9198	0.71387	26.7752
1/8	0.69987	25.1043	0.70704	25.9463	0.71409	26.8022
5/32	0.70010	25.1304	0.70726	25.9728	0.71430	26.8292
3/16	0.70033	25.1565	0.70748	25.9994	0.71452	26.8561
7/32	0.70055	25.1826	0.70770	26.0259	0.71474	26.8831
1/4	0.70078	25.2088	0.70792	26.0525	0.71496	26.9102
9/32	0.70100	25.2349	0.70815	26.0791	0.71518	26.9372
5/16	0.70123	25.2611	0.70837	26.1057	0.71539	26.9642
11/32	0.70145	25.2873	0.70859	26.1323	0.71561	26.9913
3/8	0.70168	25.3135	0.70881	26.1590	0.71583	27.0183
13/32	0.70190	25.3397	0.70903	26.1856	0.71605	27.0454
7/16	0.70213	25.3659	0.70925	26.2123	0.71626	27.0725
15/32	0.70235	25.3922	0.70947	26.2389	0.71648	27.0996
1/2	0.70257	25.4184	0.70969	26.2656	0.71670	27.1267
17/32	0.70280	25.4447	0.70991	26.2923	0.71692	27.1539
9/16	0.70302	25.4709	0.71014	26.3190	0.71713	27.1810
19/32	0.70325	25.4972	0.71036	26.3458	0.71735	27.2082
5/8	0.70347	25.5235	0.71058	26.3725	0.71757	27.2354
21/32	0.70369	25.5499	0.71080	26.3993	0.71778	27.2625
11/16	0.70392	25.5762	0.71102	26.4260	0.71800	27.2897
23/32	0.70414	25.6025	0.71124	26.4528	0.71822	27.3170
3/4	0.70437	25.6289	0.71146	26.4796	0.71843	27.3442
25/32	0.70459	25.6553	0.71168	26.5064	0.71865	27.3714
13/16	0.70481	25.6817	0.71190	26.5332	0.71886	27.3987
27/32	0.70503	25.7081	0.71211	26.5601	0.71908	27.4260
7/8	0.70526	25.7345	0.71233	26.5869	0.71930	27.4532
29/32	0.70548	25.7609	0.71255	26.6138	0.71951	27.4805
15/16	0.70570	25.7874	0.71277	26.6407	0.71973	27.5078
31/32	0.70593	25.8138	0.71299	26.6675	0.71994	27.5352
1	0.70615	25.8403	0.71321	26.6944	0.72016	27.5625

5′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.72016	27.5625	0.72700	28.4444	0.73373	29.3403
1⁄32	0.72037	27.5899	0.72721	28.4722	0.73394	29.3685
1⁄16	0.72059	27.6172	0.72742	28.5000	0.73415	29.3967
3⁄32	0.72081	27.6446	0.72763	28.5278	0.73436	29.4250
⅛	0.72102	27.6720	0.72785	28.5557	0.73457	29.4532
5⁄32	0.72124	27.6994	0.72806	28.5835	0.73477	29.4815
3⁄16	0.72145	27.7268	0.72827	28.6114	0.73498	29.5098
7⁄32	0.72166	27.7542	0.72848	28.6392	0.73519	29.5381
¼	0.72188	27.7817	0.72869	28.6671	0.73540	29.5664
9⁄32	0.72209	27.8091	0.72890	28.6950	0.73561	29.5947
5⁄16	0.72231	27.8366	0.72911	28.7229	0.73582	29.6231
11⁄32	0.72252	27.8641	0.72933	28.7508	0.73602	29.6514
⅜	0.72274	27.8916	0.72954	28.7788	0.73623	29.6798
13⁄32	0.72295	27.9191	0.72975	28.8067	0.73644	29.7082
7⁄16	0.72316	27.9466	0.72996	28.8347	0.73665	29.7366
15⁄32	0.72338	27.9742	0.73017	28.8626	0.73685	29.7650
½	0.72359	28.0017	0.73038	28.8906	0.73706	29.7934
17⁄32	0.72381	28.0293	0.73059	28.9186	0.73727	29.8218
9⁄16	0.72402	28.0569	0.73080	28.9466	0.73747	29.8503
19⁄32	0.72423	28.0845	0.73101	28.9747	0.73768	29.8788
⅝	0.72445	28.1121	0.73122	29.0027	0.73789	29.9072
21⁄32	0.72466	28.1397	0.73143	29.0308	0.73809	29.9357
11⁄16	0.72487	28.1673	0.73164	29.0588	0.73830	29.9642
23⁄32	0.72509	28.1950	0.73185	29.0869	0.73851	29.9927
¾	0.72530	28.2227	0.73206	29.1150	0.73871	30.0213
25⁄32	0.72551	28.2503	0.73227	29.1431	0.73892	30.0498
13⁄16	0.72572	28.2780	0.73248	29.1713	0.73913	30.0784
27⁄32	0.72594	28.3057	0.73269	29.1994	0.73933	30.1069
⅞	0.72615	28.3334	0.73290	29.2275	0.73954	30.1355
29⁄32	0.72636	28.3612	0.73311	29.2557	0.73975	30.1641
15⁄16	0.72657	28.3889	0.73331	29.2839	0.73995	30.1927
31⁄32	0.72679	28.4167	0.73352	29.3121	0.74016	30.2214
1	0.72700	28.4444	0.73373	29.3403	0.74036	30.2500

5′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.74036	30.2500	0.74689	31.1736	0.75333	32.1111
1/32	0.74057	30.2787	0.74710	31.2027	0.75353	32.1406
1/16	0.74077	30.3073	0.74730	31.2318	0.75373	32.1702
3/32	0.74098	30.3360	0.74750	31.2609	0.75393	32.1997
1/8	0.74118	30.3647	0.74770	31.2900	0.75413	32.2293
5/32	0.74139	30.3934	0.74791	31.3192	0.75432	32.2589
3/16	0.74159	30.4221	0.74811	31.3483	0.75452	32.2884
7/32	0.74180	30.4509	0.74831	31.3775	0.75472	32.3180
1/4	0.74200	30.4796	0.74851	31.4067	0.75492	32.3477
9/32	0.74221	30.5084	0.74871	31.4359	0.75512	32.3773
5/16	0.74241	30.5371	0.74891	31.4651	0.75532	32.4069
11/32	0.74262	30.5659	0.74912	31.4943	0.75552	32.4366
3/8	0.74282	30.5947	0.74932	31.5235	0.75572	32.4663
13/32	0.74303	30.6235	0.74952	31.5528	0.75591	32.4959
7/16	0.74323	30.6524	0.74972	31.5821	0.75611	32.5256
15/32	0.74344	30.6812	0.74992	31.6113	0.75631	32.5553
1/2	0.74364	30.7101	0.75012	31.6406	0.75651	32.5851
17/32	0.74384	30.7389	0.75032	31.6699	0.75671	32.6148
9/16	0.74405	30.7678	0.75052	31.6992	0.75691	32.6446
19/32	0.74425	30.7967	0.75073	31.7286	0.75710	32.6743
5/8	0.74446	30.8256	0.75093	31.7579	0.75730	32.7041
21/32	0.74466	30.8546	0.75113	31.7873	0.75750	32.7339
11/16	0.74486	30.8835	0.75133	31.8167	0.75770	32.7637
23/32	0.74507	30.9124	0.75153	31.8460	0.75789	32.7935
3/4	0.74527	30.9414	0.75173	31.8754	0.75809	32.8234
25/32	0.74547	30.9704	0.75193	31.9048	0.75829	32.8532
13/16	0.74568	30.9994	0.75213	31.9343	0.75849	32.8831
27/32	0.74588	31.0284	0.75233	31.9637	0.75868	32.9129
7/8	0.74608	31.0574	0.75253	31.9932	0.75888	32.9428
29/32	0.74629	31.0864	0.75273	32.0226	0.75908	32.9727
15/16	0.74649	31.1155	0.75293	32.0521	0.75927	33.0026
31/32	0.74669	31.1445	0.75313	32.0816	0.75947	33.0326
1	0.74689	31.1736	0.75333	32.1111	0.75967	33.0625

5′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.75967	33.0625	0.76592	34.0278	0.77208	35.0069
1/32	0.75986	33.0925	0.76611	34.0582	0.77227	35.0378
1/16	0.76006	33.1224	0.76630	34.0886	0.77246	35.0686
3/32	0.76026	33.1524	0.76650	34.1190	0.77265	35.0995
1/8	0.76045	33.1824	0.76669	34.1494	0.77284	35.1303
5/32	0.76065	33.2124	0.76689	34.1799	0.77303	35.1612
3/16	0.76085	33.2424	0.76708	34.2103	0.77322	35.1921
7/32	0.76104	33.2725	0.76727	34.2408	0.77341	35.2230
1/4	0.76124	33.3025	0.76747	34.2713	0.77360	35.2539
9/32	0.76143	33.3326	0.76766	34.3018	0.77379	35.2848
5/16	0.76163	33.3627	0.76785	34.3323	0.77398	35.3158
11/32	0.76183	33.3927	0.76804	34.3628	0.77417	35.3467
3/8	0.76202	33.4229	0.76824	34.3933	0.77436	35.3777
13/32	0.76222	33.4530	0.76843	34.4239	0.77455	35.4087
7/16	0.76241	33.4831	0.76862	34.4545	0.77475	35.4397
15/32	0.76261	33.5132	0.76882	34.4850	0.77493	35.4707
1/2	0.76280	33.5434	0.76901	34.5156	0.77512	35.5017
17/32	0.76300	33.5736	0.76920	34.5462	0.77531	35.5328
9/16	0.76319	33.6038	0.76939	34.5769	0.77550	35.5638
19/32	0.76339	33.6340	0.76959	34.6075	0.77569	35.5949
5/8	0.76358	33.6642	0.76978	34.6381	0.77588	35.6260
21/32	0.76378	33.6944	0.76997	34.6688	0.77607	35.6571
11/16	0.76397	33.7246	0.77016	34.6995	0.77626	35.6882
23/32	0.76417	33.7549	0.77035	34.7302	0.77645	35.7193
3/4	0.76436	33.7852	0.77055	34.7609	0.77664	35.7504
25/32	0.76456	33.8154	0.77074	34.7916	0.77683	35.7816
13/16	0.76475	33.8457	0.77093	34.8223	0.77702	35.8127
27/32	0.76495	33.8760	0.77112	34.8530	0.77721	35.8439
7/8	0.76514	33.9064	0.77131	34.8838	0.77740	35.8751
29/32	0.76533	33.9367	0.77150	34.9146	0.77759	35.9063
15/16	0.76553	33.9670	0.77169	34.9453	0.77777	35.9375
31/32	0.76572	33.9974	0.77189	34.9761	0.77796	35.9688
1	0.76592	34.0278	0.77208	35.0069	0.77815	36.0000

6′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.77815	36.0000	0.78414	37.0069	0.79005	38.0278
1/32	0.77834	36.0313	0.78433	37.0386	0.79023	38.0599
1/16	0.77853	36.0625	0.78451	37.0703	0.79042	38.0920
3/32	0.77872	36.0938	0.78470	37.1021	0.79060	38.1242
1/8	0.77890	36.1251	0.78488	37.1338	0.79078	38.1564
5/32	0.77909	36.1564	0.78507	37.1655	0.79097	38.1885
3/16	0.77928	36.1877	0.78526	37.1973	0.79115	38.2207
7/32	0.77947	36.2191	0.78544	37.2291	0.79133	38.2529
1/4	0.77966	36.2504	0.78563	37.2609	0.79152	38.2852
9/32	0.77984	36.2818	0.78581	37.2926	0.79170	38.3174
5/16	0.78003	36.3132	0.78600	37.3245	0.79188	38.3496
11/32	0.78022	36.3446	0.78618	37.3563	0.79206	38.3819
3/8	0.78041	36.3760	0.78637	37.3881	0.79225	38.4142
13/32	0.78059	36.4074	0.78655	37.4200	0.79243	38.4465
7/16	0.78078	36.4388	0.78674	37.4518	0.79261	38.4788
15/32	0.78097	36.4703	0.78692	37.4837	0.79279	38.5111
1/2	0.78116	36.5017	0.78711	37.5156	0.79298	38.5434
17/32	0.78134	36.5332	0.78729	37.5475	0.79316	38.5757
9/16	0.78153	36.5647	0.78748	37.5795	0.79334	38.6081
19/32	0.78172	36.5962	0.78766	37.6114	0.79352	38.6405
5/8	0.78190	36.6277	0.78784	37.6433	0.79370	38.6729
21/32	0.78209	36.6592	0.78803	37.6753	0.79388	38.7052
11/16	0.78228	36.6908	0.78821	37.7073	0.79407	38.7377
23/32	0.78247	36.7223	0.78840	37.7393	0.79425	38.7701
3/4	0.78265	36.7539	0.78858	37.7713	0.79443	38.8025
25/32	0.78284	36.7855	0.78876	37.8033	0.79461	38.8350
13/16	0.78302	36.8171	0.78895	37.8353	0.79479	38.8674
27/32	0.78321	36.8487	0.78913	37.8674	0.79497	38.8999
7/8	0.78340	36.8803	0.78932	37.8994	0.79516	38.9324
29/32	0.78358	36.9120	0.78950	37.9315	0.79534	38.9649
15/16	0.78377	36.9436	0.78968	37.9636	0.79552	38.9974
31/32	0.78396	36.9753	0.78987	37.9957	0.79570	39.0300
1	0.78414	37.0069	0.79005	38.0278	0.79588	39.0625

6′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.79588	39.0625	0.80163	40.1111	0.80731	41.1736
1/32	0.79606	39.0951	0.80181	40.1441	0.80749	41.2070
1/16	0.79624	39.1276	0.80199	40.1771	0.80766	41.2405
3/32	0.79642	39.1602	0.80217	40.2101	0.80784	41.2739
⅛	0.79660	39.1928	0.80235	40.2432	0.80801	41.3074
5/32	0.79678	39.2254	0.80252	40.2762	0.80819	41.3409
3/16	0.79696	39.2581	0.80270	40.3093	0.80837	41.3744
7/32	0.79714	39.2907	0.80288	40.3423	0.80854	41.4079
¼	0.79733	39.3234	0.80306	40.3754	0.80872	41.4414
9/32	0.79751	39.3560	0.80324	40.4085	0.80889	41.4749
5/16	0.79769	39.3887	0.80341	40.4417	0.80907	41.5085
11/32	0.79787	39.4214	0.80359	40.4748	0.80924	41.5421
⅜	0.79805	39.4541	0.80377	40.5079	0.80942	41.5756
13/32	0.79823	39.4868	0.80395	40.5411	0.80959	41.6092
7/16	0.79841	39.5196	0.80413	40.5742	0.80977	41.6428
15/32	0.79859	39.5523	0.80430	40.6074	0.80995	41.6764
½	0.79877	39.5851	0.80448	40.6406	0.81012	41.7101
17/32	0.79895	39.6178	0.80466	40.6738	0.81030	41.7437
9/16	0.79913	39.6506	0.80483	40.7071	0.81047	41.7774
19/32	0.79930	39.6834	0.80501	40.7403	0.81065	41.8110
⅝	0.79948	39.7163	0.80519	40.7735	0.81082	41.8447
21/32	0.79966	39.7491	0.80537	40.8068	0.81100	41.8784
11/16	0.79984	39.7819	0.80554	40.8401	0.81117	41.9121
23/32	0.80002	39.8148	0.80572	40.8734	0.81134	41.9459
¾	0.80020	39.8477	0.80590	40.9067	0.81152	41.9796
25/32	0.80038	39.8805	0.80607	40.9400	0.81169	42.0134
13/16	0.80056	39.9134	0.80625	40.9733	0.81187	42.0471
27/32	0.80074	39.9464	0.80643	41.0067	0.81204	42.0809
⅞	0.80092	39.9793	0.80660	41.0400	0.81222	42.1147
29/32	0.80110	40.0122	0.80678	41.0734	0.81239	42.1485
15/16	0.80128	40.0452	0.80696	41.1068	0.81257	42.1823
31/32	0.80145	40.0781	0.80713	41.1402	0.81274	42.2162
1	0.80163	40.1111	0.80731	41.1736	0.81291	42.2500

6′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.81291	42.2500	0.81845	43.3403	0.82391	44.4444
1/32	0.81309	42.2839	0.81862	43.3746	0.82408	44.4792
1/16	0.81326	42.3177	0.81879	43.4089	0.82425	44.5139
3/32	0.81344	42.3516	0.81896	43.4432	0.82442	44.5487
⅛	0.81361	42.3855	0.81913	43.4775	0.82459	44.5834
5/32	0.81378	42.4194	0.81930	43.5119	0.82476	44.6182
3/16	0.81396	42.4534	0.81948	43.5463	0.82493	44.6530
7/32	0.81413	42.4873	0.81965	43.5806	0.82509	44.6878
¼	0.81430	42.5213	0.81982	43.6150	0.82526	44.7227
9/32	0.81448	42.5552	0.81999	43.6494	0.82543	44.7575
5/16	0.81465	42.5892	0.82016	43.6838	0.82560	44.7923
11/32	0.81482	42.6232	0.82033	43.7183	0.82577	44.8272
⅜	0.81500	42.6572	0.82050	43.7527	0.82594	44.8621
13/32	0.81517	42.6913	0.82067	43.7872	0.82611	44.8970
7/16	0.81534	42.7253	0.82084	43.8216	0.82628	44.9319
15/32	0.81552	42.7593	0.82102	43.8561	0.82645	44.9668
½	0.81569	42.7934	0.82119	43.8906	0.82661	45.0017
17/32	0.81586	42.8275	0.82136	43.9251	0.82678	45.0367
9/16	0.81603	42.8616	0.82153	43.9597	0.82695	45.0716
19/32	0.81621	42.8957	0.82170	43.9942	0.82712	45.1066
⅝	0.81638	42.9298	0.82187	44.0288	0.82729	45.1416
21/32	0.81655	42.9639	0.82204	44.0633	0.82746	45.1766
11/16	0.81672	42.9981	0.82221	44.0979	0.82763	45.2116
23/32	0.81690	43.0322	0.82238	44.1325	0.82779	45.2466
¾	0.81707	43.0664	0.82255	44.1671	0.82796	45.2817
25/32	0.81724	43.1006	0.82272	44.2017	0.82813	45.3167
13/16	0.81741	43.1348	0.82289	44.2364	0.82830	45.3518
27/32	0.81759	43.1690	0.82306	44.2710	0.82847	45.3869
⅞	0.81776	43.2032	0.82323	44.3057	0.82863	45.4220
29/32	0.81793	43.2375	0.82340	44.3403	0.82880	45.4571
15/16	0.81810	43.2717	0.82357	44.3750	0.82897	45.4922
31/32	0.81827	43.3060	0.82374	44.4097	0.82914	45.5274
1	0.81845	43.3403	0.82391	44.4444	0.82930	45.5625

6′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.82930	45.5625	0.83463	46.6944	0.83990	47.8403
1/32	0.82947	45.5977	0.83480	46.7300	0.84006	47.8763
1/16	0.82964	45.6328	0.83496	46.7657	0.84022	47.9124
3/32	0.82981	45.6680	0.83513	46.8013	0.84039	47.9484
1/8	0.82997	45.7032	0.83529	46.8369	0.84055	47.9845
5/32	0.83014	45.7385	0.83546	46.8726	0.84071	48.0206
3/16	0.83031	45.7737	0.83562	46.9082	0.84088	48.0567
7/32	0.83048	45.8089	0.83579	46.9439	0.84104	48.0928
1/4	0.83064	45.8442	0.83595	46.9796	0.84120	48.1289
9/32	0.83081	45.8795	0.83612	47.0153	0.84137	48.1650
5/16	0.83098	45.9147	0.83628	47.0510	0.84153	48.2012
11/32	0.83114	45.9500	0.83645	47.0868	0.84169	48.2374
3/8	0.83131	45.9854	0.83661	47.1225	0.84185	48 2735
13/32	0.83148	46.0207	0.83678	47.1583	0.84202	48.3097
7/16	0.83164	46.0560	0.83694	47.1940	0.84218	48.3459
15/32	0.83181	46.0914	0.83711	47.2298	0.84234	48.3822
1/2	0.83198	46.1267	0.83727	47.2656	0.84251	48.4184
17/32	0.83214	46.1621	0.83744	47.3014	0.84267	48.4547
9/16	0.83231	46.1975	0.83760	47.3373	0.84283	48.4909
19/32	0.83248	46.2329	0.83777	47.3731	0.84299	48.5272
5/8	0.83264	46.2683	0.83793	47.4090	0.84315	48.5635
21/32	0.83281	46.3038	0.83809	47.4448	0.84332	48.5998
11/16	0.83297	46.3392	0.83826	47.4807	0.84348	48.6361
23/32	0.83314	46.3747	0.83842	47.5166	0.84364	48.6724
3/4	0.83331	46.4102	0.83859	47.5525	0.84380	48.7088
25/32	0.83347	46.4456	0.83875	47.5884	0.84397	48.7451
13/16	0.83364	46.4811	0.83891	47.6244	0.84413	48.7815
27/32	0.83380	46.5167	0.83908	47.6603	0.84429	48.8179
7/8	0.83397	46.5522	0.83924	47.6963	0.84445	48.8543
29/32	0.83414	46.5877	0.83941	47.7323	0.84461	48.8907
15/16	0.83430	46.6233	0.83957	47.7683	0.84477	48.9271
31/32	0.83447	46.6589	0.83973	47.8043	0.84494	48.9635
1	0.83463	46.6944	0.83990	47.8403	0.84510	49.0000

7′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.84510	49.0000	0.85024	50.1736	0.85532	51.3611
1/32	0.84526	49.0365	0.85040	50.2105	0.85547	51.3984
1/16	0.84542	49.0729	0.85056	50.2474	0.85563	51.4358
3/32	0.84558	49.1094	0.85072	50.2843	0.85579	51.4732
1/8	0.84574	49.1459	0.85088	50.3213	0.85595	51.5105
5/32	0.84591	49.1825	0.85104	50.3582	0.85611	51.5479
3/16	0 84607	49.2190	0.85119	50.3952	0.85626	51.5853
7/32	0.84623	49.2555	0.85135	50.4322	0.85642	51.6227
1/4	0.84639	49.2921	0.85151	50.4692	0.85658	51.6602
9/32	0.84655	49.3287	0.85167	50.5062	0.85674	51.6976
5/16	0.84671	49.3653	0.85183	50.5432	0.85689	51.7351
11/32	0.84687	49.4019	0.85199	50.5802	0.85705	51.7725
3/8	0.84703	49.4385	0.85215	50.6173	0.85721	51.8100
13/32	0.84719	49.4751	0.85231	50.6544	0.85736	51.8475
7/16	0.84735	49.5117	0.85247	50.6914	0.85752	51.8850
15/32	0.84751	49.5484	0.85263	50.7285	0.85768	51.9225
1/2	0.84768	49.5851	0.85278	50.7656	0.85783	51.9601
17/32	0.84784	49.6218	0.85294	50.8027	0.85799	51.9976
9/16	0.84800	49.6584	0.85310	50.8399	0.85815	52.0352
19/32	0.84816	49.6952	0.85326	50.8770	0.85831	52.0728
5/8	0.84832	49.7319	0.85342	50.9142	0.85846	52.1104
21/32	0.84848	49.7686	0.85358	50.9513	0.85862	52.1480
11/16	0.84864	49.8054	0.85374	50.9885	0.85878	52.1856
23/32	0.84880	49.8421	0.85389	51.0257	0.85893	52.2232
3/4	0.84896	49.8789	0.85405	51.0629	0.85909	52.2609
25/32	0.84912	49.9157	0.85421	51.1002	0.85924	52.2985
13/16	0.84928	49.9525	0.85437	51.1374	0.85940	52.3362
27/32	0.84944	49.9893	0.85453	51.1746	0.85956	52.3739
7/8	0.84960	50.0261	0.85469	51.2119	0.85971	52.4116
29/32	0.84976	50.0630	0.85484	51.2492	0.85987	52.4493
15/16	0.84992	50.0999	0.85500	51.2865	0.86003	52.4870
31/32	0.85008	50.1367	0.85516	51.3238	0.86018	52.5247
1	0.85024	50.1736	0.85532	51.3611	0.86034	52.5625

7′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.86034	52.5625	0.86530	53.7778	0.87021	55.0069
1/32	0.86049	52.6003	0.86546	53.8160	0.87036	55.0456
1/16	0.86065	52.6380	0.86561	53.8542	0.87051	55.0842
3/32	0.86081	52.6758	0.86576	53.8924	0.87067	55.1229
1/8	0.86096	52.7137	0.86592	53.9307	0.87082	55.1616
5/32	0.86112	52.7515	0.86607	53.9689	0.87097	55.2003
3/16	0.86127	52.7893	0.86623	54.0072	0.87112	55.2390
7/32	0.86143	52.8272	0.86638	54.0455	0.87127	55.2777
1/4	0.86158	52.8650	0.86653	54.0838	0.87143	55.3164
9/32	0.86174	52.9029	0.86669	54.1221	0.87158	55.3552
5/16	0.86190	52.9408	0.86684	54.1604	0.87173	55.3939
11/32	0.86205	52.9787	0.86699	54.1987	0.87188	55.4327
3/8	0.86221	53.0166	0.86715	54.2371	0.87203	55.4715
13/32	0.86236	53.0545	0.86730	54.2755	0.87219	55.5103
7/16	0.86252	53.0925	0.86746	54.3138	0.87234	55.5491
15/32	0.86267	53.1304	0.86761	54.3522	0.87249	55.5879
1/2	0.86283	53.1684	0.86776	54.3906	0.87264	55.6267
17/32	0.86298	53.2064	0.86792	54.4290	0.87279	55.6656
9/16	0.86314	53.2444	0.86807	54.4675	0.87294	55.7045
19/32	0.86329	53.2824	0.86822	54.5059	0.87310	55.7433
5/8	0.86345	53.3204	0.86838	54.5444	0.87325	55.7822
21/32	0.86360	53.3585	0.86853	54.5829	0.87340	55.8211
11/16	0.86376	53.3965	0.86868	54.6213	0.87355	55.8601
23/32	0.86391	53.4346	0.86883	54.6598	0.87370	55.8990
3/4	0.86407	53.4727	0.86899	54.6984	0.87385	55 9379
25/32	0.86422	53.5107	0.86914	54.7369	0.87400	55.9769
13/16	0.86438	53.5489	0.86929	54.7754	0.87416	56.0159
27/32	0.86453	53.5870	0.86945	54.8140	0.87431	56.0549
7/8	0.86468	53.6251	0.86960	54.8525	0.87446	56.0939
29/32	0.86484	53.6633	0.86975	54.8911	0.87461	56.1329
15/16	0.86499	53.7014	0.86990	54.9297	0.87476	56.1719
31/32	0.86515	53.7396	0.87006	54.9683	0.87491	56.2109
1	0.86530	53.7778	0.87021	55.0069	0.87506	56.2500

7′

Fractions of an inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.87506	56.2500	0.87986	57.5069	0.88461	58.7778
1/32	0.87521	56.2891	0.88001	57.5464	0.88475	58.8177
1/16	0.87536	56.3282	0.88016	57.5860	0.88490	58.8577
3/32	0.87551	56.3672	0.88031	57.6255	0.88505	58.8976
1/8	0.87566	56.4064	0.88046	57.6650	0.88520	58.9376
5/32	0.87581	56.4455	0.88061	57.7046	0.88534	58.9776
3/16	0.87597	56.4846	0.88075	57.7442	0.88549	59.0176
7/32	0.87612	56.5238	0.88090	57.7838	0.88564	59.0576
1/4	0.87627	56.5629	0.88105	57.8234	0.88579	59.0977
9/32	0.87642	56.6021	0.88120	57.8630	0.88593	59.1377
5/16	0.87657	56.6413	0.88135	57.9026	0.88608	59.1778
11/32	0.87672	56.6805	0.88150	57.9422	0.88623	59.2178
3/8	0.87687	56.7197	0.88165	57.9819	0.88637	59.2579
13/32	0.87702	56.7590	0.88179	58.0215	0.88652	59.2980
7/16	0.87717	56.7982	0.88194	58.0612	0.88667	59.3381
15/32	0.87732	56.8375	0.88209	58.1009	0.88681	59.3783
1/2	0.87747	56.8767	0.88224	58.1406	0.88696	59.4184
17/32	0.87762	56.9160	0.88239	58.1803	0.88711	59.4586
9/16	0.87777	56.9553	0.88254	58.2201	0.88725	59.4987
19/32	0.87792	56.9946	0.88268	58.2598	0.88740	59.5389
5/8	0.87807	57.0340	0.88283	58.2996	0.88755	59.5791
21/32	0.87822	57.0733	0.88298	58.3394	0.88769	59.6193
11/16	0.87837	57.1127	0.88313	58.3792	0.88784	59.6595
23/32	0.87852	57.1520	0.88328	58.4190	0.88799	59.6998
3/4	0.87867	57.1914	0.88342	58.4588	0.88813	59.7400
25/32	0.87881	57.2308	0.88357	58.4986	0.88828	59.7803
13/16	0.87896	57.2702	0.88372	58.5384	0.88843	59.8206
27/32	0.87911	57.3096	0.88387	58.5783	0.88857	59.8608
7/8	0.87926	57.3491	0.88402	58.6182	0.88872	59.9011
29/32	0.87941	57.3885	0.88416	58.6580	0.88886	59.9415
15/16	0.87956	57.4280	0.88431	58.6979	0.88901	59.9818
31/32	0.87971	57.4675	0.88446	58.7379	0.88916	60.0221
1	0.87986	57.5069	0.88461	58.7778	0.88930	60.0625

7′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.88930	60.0625	0.89395	61.3611	0.89854	62.6736
1/32	0.88945	60.1029	0.89409	61.4019	0.89869	62.7149
1/16	0.88959	60.1433	0.89424	61.4427	0.89883	62.7561
3/32	0.88974	60.1837	0.89438	61.4836	0.89897	62.7974
1/8	0.88989	60.2241	0.89452	61.5244	0.89911	62.8387
5/32	0.89003	60.2645	0.89467	61.5653	0.89926	62.8799
3/16	0.89018	60.3049	0.89481	61.6061	0.89940	62.9213
7/32	0.89032	60.3454	0.89496	61.6470	0.89954	62.9626
1/4	0.89047	60.3859	0.89510	61.6879	0.89968	63.0039
9/32	0.89061	60.4263	0.89524	61.7288	0.89983	63.0453
5/16	0.89076	60.4668	0.89539	61.7698	0.89997	63.0866
11/32	0.89090	60.5073	0.89553	61.8107	0.90011	63.1280
3/8	0.89105	60.5479	0.89568	61.8517	0.90025	63.1694
13/32	0.89119	60.5884	0.89582	61.8926	0.90040	63.2108
7/16	0.89134	60.6289	0.89596	61.9336	0.90054	63.2522
15/32	0.89149	60.6695	0.89611	61.9746	0.90068	63.2936
1/2	0.89163	60.7101	0.89625	62.0156	0.90082	63.3351
17/32	0.89178	60.7507	0.89639	62.0566	0.90096	63.3765
9/16	0.89192	60.7913	0.89654	62.0977	0.90111	63.4180
19/32	0.89207	60.8319	0.89668	62.1387	0.90125	63.4595
5/8	0.89221	60.8725	0.89682	62.1798	0.90139	63.5010
21/32	0.89236	60.9131	0.89697	62.2209	0.90153	63.5425
11/16	0.89250	60.9538	0.89711	62.2620	0.90167	63.5840
23/32	0.89265	60.9945	0.89725	62.3031	0.90182	63.6255
3/4	0.89279	61.0352	0.89740	62.3442	0.90196	63.6671
25/32	0.89293	61.0759	0.89754	62.3853	0.90210	63.7087
13/16	0.89308	61.1166	0.89768	62.4265	0.90224	63.7502
27/32	0.89322	61.1573	0.89783	62.4676	0.90238	63.7918
7/8	0.89337	61.1980	0.89797	62.5088	0.90252	63.8334
29/32	0.89351	61.2388	0.89811	62.5500	0.90267	63.8751
15/16	0.89366	61.2795	0.89826	62.5912	0.90281	63.9167
31/32	0.89380	61.3203	0.89840	62.6324	0.90295	63.9583
1	0.89395	61.3611	0.89854	62.6736	0.90309	64.0000

8′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.90309	64.0000	0.90759	65.3403	0.91204	66.6944
1/32	0.90323	64.0417	0.90773	65.3824	0.91218	66.7370
1/16	0.90337	64.0834	0.90787	65.4245	0.91232	66.7795
3/32	0.90351	64.1251	0.90801	65.4666	0.91246	66.8221
1/8	0.90366	64.1668	0.90815	65.5088	0.91260	66.8647
5/32	0.90380	64.2085	0.90829	65.5510	0.91274	66.9073
3/16	0 90394	64.2502	0.90843	65.5931	0.91287	66.9499
7/32	0.90408	64.2920	0.90857	65.6353	0.91301	66.9925
1/4	0.90422	64.3338	0.90871	65.6775	0.91315	67.0352
9/32	0.90436	64.3755	0.90885	65.7197	0.91329	67.0778
5/16	0.90450	64.4173	0.90899	65.7620	0.91343	67.1205
11/32	0.90464	64.4592	0.90913	65.8042	0.91357	67.1631
3/8	0.90478	64.5010	0.90927	65.8465	0.91370	67.2058
13/32	0.90492	64.5428	0.90941	65.8887	0.91384	67.2485
7/16	0.90506	64.5847	0.90954	65.9310	0.91398	67.2913
15/32	0.90521	64.6265	0.90968	65.9733	0.91412	67.3340
1/2	0.90535	64.6684	0.90982	66.0156	0.91425	67.3767
17/32	0.90549	64.7103	0.90996	66.0579	0.91439	67.4195
9/16	0.90563	64.7522	0.91010	66.1003	0.91453	67.4623
19/32	0.90577	64.7941	0.91024	66.1426	0.91467	67.5051
5/8	0.90591	64.8360	0.91038	66.1850	0.91481	67.5479
21/32	0.90605	64.8780	0.91052	66.2274	0.91494	67.5907
11/16	0.90619	64.9199	0.91066	66.2698	0.91508	67.6335
23/32	0.90633	64.9619	0.91080	66.3122	0.91522	67.6763
3/4	0.90647	65.0039	0.91094	66.3546	0.91536	67.7192
25/32	0.90661	65.0459	0.91107	66.3970	0.91549	67.7621
13/16	0.90675	65.0879	0.91121	66.4395	0.91563	67.8049
27/32	0.90689	65.1299	0.91135	66.4819	0.91577	67.8478
7/8	0.90703	65.1720	0.91149	66.5244	0.91591	67.8907
29/32	0.90717	65.2140	0.91163	66.5669	0.91604	67.9337
15/16	0.90731	65.2561	0.91177	66.6094	0.91618	67.9766
31/32	0.90745	65.2982	0.91191	66.6519	0.91632	68.0195
1	0.90759	65.3403	0.91204	66 6944	0.91645	68.0625

8′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.91645	68.0625	0.92082	69.4444	0.92514	70.8403
1/32	0.91659	68.1055	0.92095	69.4879	0.92527	70.8841
1/16	0.91673	68.1485	0.92109	69.5313	0.92541	70.9280
3/32	0.91687	68.1915	0.92123	69.5747	0.92554	70.9718
1/8	0.91700	68.2345	0.92136	69.6182	0.92568	71.0157
5/32	0.91714	68.2775	0.92150	69.6616	0.92581	71.0596
3/16	0.91728	68.3206	0.92163	69.7051	0.92595	71.1035
7/32	0.91741	68.3636	0.92177	69.7486	0.92608	71.1475
1/4	0.91755	68.4067	0.92190	69.7921	0.92621	71.1914
9/32	0.91769	68.4498	0.92204	69.8356	0.92635	71.2354
5/16	0.91782	68.4929	0.92217	69.8792	0.92648	71.2793
11/32	0.91796	68.5360	0.92231	69.9227	0.92662	71.3233
3/8	0.91810	68.5791	0.92244	69.9663	0.92675	71.3673
13/32	0.91823	68.6222	0.92258	70.0098	0.92688	71.4113
7/16	0.91837	68.6654	0.92271	70.0534	0.92702	71.4553
15/32	0.91851	68.7086	0.92285	70.0970	0.92715	71.4994
1/2	0.91864	68.7517	0.92298	70.1406	0.92728	71.5434
17/32	0.91878	68.7949	0.92312	70.1843	0.92742	71.5875
9/16	0.91891	68.8381	0.92325	70.2279	0.92755	71.6315
19/32	0.91905	68.8814	0.92339	70.2715	0.92769	71.6756
5/8	0.91919	68.9246	0.92352	70.3152	0.92782	71.7197
21/32	0.91932	68.9678	0.92366	70.3589	0.92795	71.7638
11/16	0.91946	69.0111	0.92379	70.4026	0.92809	71.8080
23/32	0.91960	69.0544	0.92393	70.4463	0.92822	71.8521
3/4	0.91973	69.0977	0.92406	70.4900	0.92835	71.8963
25/32	0.91987	69.1410	0.92420	70.5338	0.92849	71.9404
13/16	0.92000	69.1843	0.92433	70.5775	0.92862	71.9846
27/32	0.92014	69.2276	0.92447	70.6213	0.92875	72.0288
7/8	0.92028	69.2709	0.92460	70.6650	0.92889	72.0730
29/32	0.92041	69.3143	0.92474	70.7088	0.92902	72.1172
15/16	0.92055	69.3577	0.92487	70.7526	0.92915	72.1615
31/32	0.92068	69.4010	0.92501	70.7964	0.92929	72.2057
1	0.92082	69.4444	0.92514	70.8403	0.92942	72.2500

8′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.92942	72.2500	0.93366	73.6736	0.93785	75.1111
1/32	0.92955	72.2943	0.93379	73.7183	0.93798	75.1563
1/16	0.92968	72.3386	0.93392	73.7630	0.93811	75.2014
3/32	0.92982	72.3829	0.93405	73.8078	0.93824	75.2466
1/8	0.92995	72.4272	0.93418	73.8525	0.93837	75.2918
5/32	0.93008	72.4715	0.93431	73.8973	0.93850	75.3370
3/16	0.93022	72.5159	0.93445	73.9421	0.93863	75.3822
7/32	0.93035	72.5602	0.93458	73.9869	0.93876	75.4274
1/4	0.93048	72.6046	0.93471	74.0317	0.93889	75.4727
9/32	0.93061	72.6490	0.93484	74.0765	0.93903	75.5179
5/16	0.93075	72.6934	0.93497	74.1213	0.93916	75.5632
11/32	0.93088	72.7378	0.93510	74.1662	0.93929	75.6085
3/8	0.93101	72.7822	0.93523	74.2110	0.93942	75.6538
13/32	0.93115	72.8267	0.93537	74.2559	0.93955	75.6991
7/16	0.93128	72.8711	0.93550	74.3008	0.93968	75.7444
15/32	0.93141	72.9156	0.93563	74.3457	0.93981	75.7897
1/2	0.93154	72.9601	0.93576	74.3906	0.93994	75.8351
17/32	0.93168	73.0046	0.93589	74.4356	0.94006	75.8804
9/16	0.93181	73.0491	0.93602	74.4805	0.94019	75.9258
19/32	0.93194	73.0936	0.93615	74.5255	0.94032	75.9712
5/8	0.93207	73.1381	0.93628	74.5704	0.94045	76.0166
21/32	0.93220	73.1827	0.93641	74.6154	0.94058	76.0620
11/16	0.93234	73.2272	0.93655	74.6604	0.94071	76.1074
23/32	0.93247	73.2718	0.93668	74.7054	0.94084	76.1529
3/4	0.93260	73.3164	0.93681	74.7504	0.94097	76.1984
25/32	0.93273	73.3610	0.93694	74.7955	0.94110	76.2438
13/16	0.93286	73.4056	0.93707	74.8405	0.94123	76.2893
27/32	0.93300	73.4503	0.93720	74.8856	0.94136	76.3348
7/8	0.93313	73.4949	0.93733	74.9307	0.94149	76.3803
29/32	0.93326	73.5396	0.93746	74.9758	0.94162	76.4258
15/16	0.93339	73.5842	0.93759	75.0209	0.94175	76.4714
31/32	0.93352	73.6289	0.93772	75.0660	0.94188	76.5169
1	0.93366	73.6736	0.93785	75.1111	0.94201	76.5625

8′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.94201	76.5625	0.94612	78.0278	0.95020	79.5069
1/32	0.94214	76.6081	0.94625	78.0738	0.95033	79.5534
1/16	0.94227	76.6537	0.94638	78.1198	0.95046	79.5999
3/32	0.94240	76.6993	0.94651	78.1659	0.95058	79.6463
⅛	0.94252	76.7449	0.94664	78.2119	0.95071	79.6928
5/32	0.94265	76.7905	0.94676	78.2580	0.95084	79.7393
3/16	0.94278	76.8362	0.94689	78.3041	0.95096	79.7858
7/32	0.94291	76.8818	0.94702	78.3502	0.95109	79.8324
¼	0.94304	76.9275	0.94715	78.3963	0.95122	79.8789
9/32	0.94317	76.9732	0.94728	78.4424	0.95134	79.9255
5/16	0.94330	77.0189	0.94740	78.4885	0.95147	79.9720
11/32	0.94343	77.0646	0.94753	78.5347	0.95160	80.0186
⅜	0.94356	77.1104	0.94766	78.5808	0.95172	80.0652
13/32	0.94369	77.1561	0.94779	78.6270	0.95185	80.1118
7/16	0.94381	77.2018	0.94791	78.6732	0.95197	80.1584
15/32	0.94394	77.2476	0.94804	78.7194	0.95210	80.2051
½	0.94407	77.2934	0.94817	78.7656	0.95223	80.2517
17/32	0.94420	77.3392	0.94830	78.8119	0.95235	80.2984
9/16	0.94433	77.3850	0.94842	78.8581	0.95248	80.3451
19/32	0.94446	77.4308	0.94855	78.9044	0.95261	80.3918
⅝	0.94459	77.4767	0.94868	78.9506	0.95273	80.4385
21/32	0.94471	77.5225	0.94881	78.9969	0.95286	80.4852
11/16	0.94484	77.5684	0.94893	79.0432	0.95298	80.5319
23/32	0.94497	77.6143	0.94906	79.0895	0.95311	80.5787
¾	0.94510	77.6602	0.94919	79.1359	0.95324	80.6254
25/32	0.94523	77.7061	0.94931	79.1822	0.95336	80.6722
13/16	0.94536	77.7520	0.94944	79.2285	0.95349	80.7190
27/32	0.94548	77.7979	0.94957	79.2749	0.95361	80.7658
⅞	0.94561	77.8439	0.94969	79.3213	0.95374	80.8126
29/32	0.94574	77.8898	0.94982	79.3677	0.95387	80.8594
15/16	0.94587	77.9358	0.94995	79.4141	0.95399	80.9063
31/32	0.94600	77.9818	0.95008	79.4605	0.95412	80.9531
1	0.94612	78.0278	0.95020	79.5069	0.95424	81.0000

9′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.95424	81.0000	0.95825	82.5069	0.96221	84.0278
1/32	0.95437	81.0469	0.95837	82.5543	0.96233	84.0755
1/16	0.95449	81.0938	0.95849	82.6016	0.96246	84.1233
3/32	0.95462	81.1407	0.95862	82.6489	0.96258	84.1711
1/8	0.95474	81.1876	0.95874	82.6963	0.96270	84.2189
5/32	0.95487	81.2345	0.95887	82.7437	0.96283	84.2667
3/16	0.95500	81.2815	0.95899	82.7910	0.96295	84.3145
7/32	0.95512	81.3285	0.95912	82.8384	0.96307	84.3623
1/4	0.95525	81.3754	0.95924	82.8859	0.96320	84.4102
9/32	0.95537	81.4224	0.95936	82.9333	0.96332	84.4580
5/16	0.95550	81.4694	0.95949	82.9807	0.96344	84.5059
11/32	0.95562	81.5164	0.95961	83.0282	0.96357	84.5538
3/8	0.95575	81.5635	0.95974	83.0756	0.96369	84.6017
13/32	0.95587	81.6105	0.95986	83.1231	0.96381	84.6496
7/16	0.95600	81.6576	0.95998	83.1706	0.96394	84.6975
15/32	0.95612	81.7047	0.96011	83.2181	0.96406	84.7454
1/2	0.95625	81.7517	0.96023	83.2656	0.96418	84.7934
17/32	0.95637	81.7988	0.96036	83.3132	0.96430	84.8414
9/16	0.95650	81.8459	0.96048	83.3607	0.96443	84.8894
19/32	0.95662	81.8931	0.96060	83.4083	0.96455	84.9373
5/8	0.95675	81.9402	0.96073	83.4558	0.96467	84.9854
21/32	0.95687	81.9874	0.96085	83.5034	0.96479	85.0334
11/16	0.95700	82.0345	0.96098	83.5510	0.96492	85.0814
23/32	0.95712	82.0817	0.96110	83.5986	0.96504	85.1295
3/4	0.95725	82.1289	0.96122	83.6463	0.96516	85.1775
25/32	0.95737	82.1761	0.96135	83.6939	0.96529	85.2256
13/16	0.95750	82.2233	0.96147	83.7416	0.96541	85.2737
27/32	0.95762	82.2706	0.96159	83.7892	0.96553	85.3218
7/8	0.95775	82.3178	0.96172	83.8369	0.96565	85.3699
29/32	0.95787	82.3651	0.96184	83.8846	0.96577	85.4180
15/16	0.95800	82.4124	0.96196	83.9323	0.96590	85.4662
31/32	0.95812	82.4596	0.96209	83.9800	0.96602	85.5143
1	0.95825	82.5069	0.96221	84.0278	0.96614	85.5625

9′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.96614	85.5625	0.97004	87.1111	0.97390	88.6736
1/32	0.96626	85.6107	0.97016	87.1597	0.97402	88.7227
1/16	0.96639	85.6589	0.97028	87.2084	0.97414	88.7717
3/32	0.96651	85.7071	0.97040	87.2570	0.97426	88.8208
1/8	0.96663	85.7553	0.97052	87.3057	0.97438	88.8699
5/32	0.96675	85.8036	0.97064	87.3543	0.97450	88.9190
3/16	0.96687	85.8518	0.97076	87.4030	0.97462	88.9681
7/32	0.96700	85.9001	0.97088	87.4517	0.97474	89.0173
1/4	0.96712	85.9484	0.97101	87.5004	0.97486	89.0664
9/32	0.96724	85.9966	0.97113	87.5492	0.97498	89.1156
5/16	0.96736	86.0449	0.97125	87.5979	0.97510	89.1647
11/32	0.96748	86.0933	0.97137	87.6467	0.97522	89.2139
3/8	0.96761	86.1416	0.97149	87.6954	0.97534	89.2631
13/32	0.96773	86.1899	0.97161	87.7442	0.97546	89.3123
7/16	0.96785	86.2383	0.97173	87.7930	0.97558	89.3616
15/32	0.96797	86.2867	0.97185	87.8418	0.97570	89.4108
1/2	0.96809	86.3351	0.97197	87.8906	0.97581	89.4601
17/32	0.96822	86.3835	0.97209	87.9395	0.97593	89.5093
9/16	0.96834	86.4319	0.97221	87.9883	0.97605	89.5586
19/32	0.96846	86.4803	0.97233	88.0372	0.97617	89.6079
5/8	0.96858	86.5288	0.97245	88.0860	0.97629	89.6572
21/32	0.96870	86.5772	0.97257	88.1349	0.97641	89.7065
11/16	0.96882	86.6257	0.97269	88.1838	0.97653	89.7559
23/32	0.96894	86.6742	0.97281	88.2328	0.97665	89.8052
3/4	0.96907	86.7227	0.97294	88.2817	0.97677	89.8546
25/32	0.96919	86.7712	0.97306	88.3306	0.97689	89.9040
13/16	0.96931	86.8197	0.97318	88.3796	0.97701	89.9534
27/32	0.96943	86.8682	0.97330	88.4286	0.97713	90.0028
7/8	0.96955	86.9168	0.97342	88.4775	0.97725	90.0522
29/32	0.96967	86.9653	0.97354	88.5265	0.97737	90.1016
15/16	0.96979	87.0139	0.97366	88.5755	0.97749	90.1511
31/32	0.96992	87.0625	0.97378	88.6246	0.97760	90.2005
1	0.97004	87.1111	0.97390	88.6736	0.97772	90.2500

9′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.97772	90.2500	0.98152	91.8403	0.98528	93.4444
1/32	0.97784	90.2995	0.98163	91.8902	0.98539	93.4948
1/16	0.97796	90.3490	0.98175	91.9401	0.98551	93.5452
3/32	0.97808	90.3985	0.98187	91.9901	0.98563	93.5955
1/8	0.97820	90.4480	0.98199	92.0400	0.98574	93.6459
5/32	0.97832	90.4976	0.98211	92.0900	0.98586	93.6963
3/16	0.97844	90.5471	0.98222	92.1400	0.98598	93.7468
7/32	0.97856	90.5967	0.98234	92.1900	0.98609	93.7972
1/4	0.97867	90.6463	0.98246	92.2400	0.98621	93.8477
9/32	0.97879	90.6959	0.98258	92.2900	0.98633	93.8981
5/16	0.97891	90.7455	0.98270	92.3401	0.98645	93.9486
11/32	0.97903	90.7951	0.98281	92.3901	0.98656	93.9991
3/8	0.97915	90.8447	0.98293	92.4402	0.98668	94.0496
13/32	0.97927	90.8944	0.98305	92.4903	0.98680	94.1001
7/16	0.97939	90.9440	0.98317	92.5404	0.98691	94.1506
15/32	0.97951	90.9937	0.98328	92.5905	0.98703	94.2012
1/2	0.97962	91.0434	0.98340	92.6406	0.98714	94.2517
17/32	0.97974	91.0931	0.98352	92.6908	0.98726	94.3023
9/16	0.97986	91.1428	0.98364	92.7409	0.98738	94.3529
19/32	0.97998	91.1926	0.98375	92.7911	0.98749	94.4035
5/8	0.98010	91.2423	0.98387	92.8413	0.98761	94.4541
21/32	0.98022	91.2921	0.98399	92.8914	0.98773	94.5047
11/16	0.98033	91.3418	0.98411	92.9417	0.98784	94.5554
23/32	0.98045	91.3916	0.98422	92.9919	0.98796	94.6060
3/4	0.98057	91.4414	0.98434	93.0421	0.98808	94.6567
25/32	0.98069	91.4912	0.98446	93.0923	0.98819	94.7074
13/16	0.98081	91.5410	0.98457	93.1426	0.98831	94.7581
27/32	0.98093	91.5909	0.98469	93.1929	0.98842	94.8088
7/8	0.98104	91.6407	0.98481	93.2432	0.98854	94.8595
29/32	0.98116	91.6906	0.98493	93.2935	0.98866	94.9102
15/16	0.98128	91.7405	0.98504	93.3438	0.98877	94.9610
31/32	0.98140	91.7904	0.98516	93.3941	0.98889	95.0117
1	0.98152	91.8403	0.98528	93.4444	0.98900	95.0625

9′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	0.98900	95.0625	0.99270	96.6944	0.99637	98.3403
1/32	0.98912	95.1133	0.99282	96.7457	0.99648	98.3919
1/16	0.98924	95.1641	0.99293	96.7969	0.99659	98.4436
3/32	0.98935	95.2149	0.99305	96.8482	0.99671	98.4953
1/8	0.98947	95.2657	0.99316	96.8994	0.99682	98.5470
5/32	0.98958	95.3166	0.99328	96.9507	0.99694	98.5987
3/16	0.98970	95.3674	0.99339	97.0020	0.99705	98.6504
7/32	0.98982	95.4183	0.99351	97.0533	0.99716	98.7022
1/4	0.98993	95.4692	0.99362	97.1046	0.99728	98.7539
9/32	0.99005	95.5201	0.99373	97.1559	0.99739	98.8057
5/16	0.99016	95.5710	0.99385	97.2073	0.99750	98.8574
11/32	0.99028	95.6219	0.99396	97.2586	0.99762	98.9092
3/8	0.99039	95.6729	0.99408	97.3100	0.99773	98.9610
13/32	0.99051	95.7238	0.99419	97.3614	0.99785	99.0129
7/16	0.99063	95.7748	0.99431	97.4128	0.99796	99.0647
15/32	0.99074	95.8257	0.99442	97.4642	0.99807	99.1165
1/2	0.99086	95.8767	0.99454	97.5156	0.99819	99.1684
17/32	0.99097	95.9277	0.99465	97.5671	0.99830	99.2203
9/16	0.99109	95.9788	0.99477	97.6185	0.99841	99.2722
19/32	0.99120	96.0298	0.99488	97.6700	0.99853	99.3241
5/8	0.99132	96.0808	0.99499	97.7215	0.99864	99.3760
21/32	0.99143	96.1319	0.99511	97.7730	0.99875	99.4279
11/16	0.99155	96.1830	0.99522	97.8245	0.99887	99.4798
23/32	0.99166	96.2341	0.99534	97.8760	0.99898	99.5318
3/4	0.99178	96.2852	0.99545	97.9275	0.99909	99.5838
25/32	0.99189	96.3363	0.99557	97.9791	0.99921	99.6357
13/16	0.99201	96.3874	0.99568	98.0306	0.99932	99.6877
27/32	0.99213	96.4385	0.99580	98.0822	0.99943	99.7398
7/8	0.99224	96.4897	0.99591	98.1338	0.99955	99.7918
29/32	0.99236	96.5409	0.99602	98.1854	0.99966	99.8438
15/16	0.99247	96.5920	0.99614	98.2370	0.99977	99.8959
31/32	0.99259	96.6432	0.99625	98.2886	0.99989	99.9479
1	0.99270	96.6944	0.99637	98.3403	1.00000	100.0000

10′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.00000	100.0000	1.00360	101.6736	1.00718	103.3611
1/32	1.00011	100.0521	1.00372	101.7261	1.00729	103.4141
1/16	1.00023	100.1042	1.00383	101.7787	1.00740	103.4670
3/32	1.00034	100.1563	1.00394	101.8312	1.00751	103.5200
1/8	1.00045	100.2084	1.00405	101.8838	1.00762	103.5730
5/32	1.00057	100.2606	1.00416	101.9364	1.00773	103.6260
3/16	1.00068	100.3127	1.00428	101.9890	1.00785	103.6791
7/32	1.00079	100.3649	1.00439	102.0416	1.00796	103.7321
1/4	1.00090	100.4171	1.00450	102.0942	1.00807	103.7852
9/32	1.00102	100.4693	1.00461	102.1468	1.00818	103.8382
5/16	1.00113	100.5215	1.00472	102.1995	1.00829	103.8913
11/32	1.00124	100.5737	1.00484	102.2521	1.00840	103.9444
3/8	1.00136	100.6260	1.00495	102.3048	1.00851	103.9975
13/32	1.00147	100.6782	1.00506	102.3575	1.00862	104.0506
7/16	1.00158	100.7305	1.00517	102.4102	1.00873	104.1038
15/32	1.00169	100.7828	1.00528	102.4629	1.00884	104.1569
1/2	1.00181	100.8351	1.00540	102.5156	1.00895	104.2101
17/32	1.00192	100.8874	1.00551	102.5684	1.00907	104.2632
9/16	1.00203	100.9397	1.00562	102.6211	1.00918	104.3164
19/32	1.00214	100.9920	1.00573	102.6739	1.00929	104.3696
5/8	1.00226	101.0444	1.00584	102.7267	1.00940	104.4229
21/32	1.00237	101.0967	1.00595	102.7795	1.00951	104.4761
11/16	1.00248	101.1491	1.00606	102.8323	1.00962	104.5293
23/32	1.00259	101.2015	1.00618	102.8851	1.00973	104.5826
3/4	1.00271	101.2539	1.00629	102.9379	1.00984	104.6359
25/32	1.00282	101.3063	1.00640	102.9908	1.00995	104.6891
13/16	1.00293	101.3588	1.00651	103.0436	1.01006	104.7424
27/32	1.00304	101.4112	1.00662	103.0965	1.01017	104.7957
7/8	1.00316	101.4636	1.00673	103.1494	1.01028	104.8491
29/32	1.00327	101.5161	1.00684	103.2023	1.01039	104.9024
15/16	1.00338	101.5686	1.00696	103.2552	1.01050	104.9558
31/32	1.00349	101.6211	1.00707	103.3082	1.01061	105.0091
1	1.00360	101.6736	1.00718	103.3611	1.01072	105.0625

10′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.01072	105.0625	1.01424	106.7778	1.01773	108.5069
1/32	1.01083	105.1159	1.01435	106.8316	1.01784	108.5612
1/16	1.01094	105.1693	1.01446	106.8854	1.01795	108.6155
3/32	1.01105	105.2227	1.01457	106.9393	1.01805	108.6698
1/8	1.01116	105.2762	1.01468	106.9932	1.01816	108.7241
5/32	1.01128	105.3296	1.01479	107.0470	1.01827	108.7784
3/16	1.01139	105.3831	1.01490	107.1009	1.01838	108.8327
7/32	1.01150	105.4365	1.01501	107.1548	1.01849	108.8871
1/4	1.01161	105.4900	1.01512	107.2088	1.01860	108.9414
9/32	1.01172	105.5435	1.01522	107.2627	1.01870	108.9958
5/16	1.01183	105.5970	1.01533	107.3167	1.01881	109.0502
11/32	1.01194	105.6506	1.01544	107.3706	1.01892	109.1046
3/8	1.01205	105.7041	1.01555	107.4246	1.01903	109.1590
13/32	1.01216	105.7577	1.01566	107.4786	1.01914	109.2134
7/16	1.01227	105.8112	1.01577	107.5326	1.01925	109.2678
15/32	1.01238	105.8648	1.01588	107.5866	1.01935	109.3223
1/2	1.01249	105.9184	1.01599	107.6406	1.01946	109.3767
17/32	1.01260	105.9720	1.01610	107.6947	1.01957	109.4312
9/16	1.01271	106.0256	1.01621	107.7487	1.01968	109.4857
19/32	1.01282	106.0793	1.01632	107.8028	1.01979	109.5402
5/8	1.01293	106.1329	1.01642	107.8569	1.01989	109.5947
21/32	1.01303	106.1866	1.01653	107.9110	1.02000	109.6493
11/16	1.01314	106.2403	1.01664	107.9651	1.02011	109.7038
23/32	1.01325	106.2940	1.01675	108.0192	1.02022	109.7584
3/4	1.01336	106.3477	1.01686	108.0734	1.02033	109.8129
25/32	1.01347	106.4014	1.01697	108.1275	1.02043	109.8675
13/16	1.01358	106.4551	1.01708	108.1817	1.02054	109.9221
27/32	1.01369	106.5088	1.01719	108.2358	1.02065	109.9767
7/8	1.01380	106.5626	1.01729	108.2900	1.02076	110.0314
29/32	1.01391	106.6164	1.01740	108.3442	1.02087	110.0860
15/16	1.01402	106.6702	1.01751	108.3985	1.02097	110.1407
31/32	1.01413	106.7240	1.01762	108.4527	1.02108	110.1953
1	1.01424	106.7778	1.01773	108.5069	1.02119	110.2500

10′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.02119	110.2500	1.02462	112.0069	1.02803	113.7778
1/32	1.02130	110.3047	1.02473	112.0621	1.02813	113.8333
1/16	1.02140	110.3594	1.02484	112.1172	1.02824	113.8889
3/32	1.02151	110.4141	1.02494	112.1724	1.02835	113.9445
1/8	1.02162	110.4689	1.02505	112.2275	1.02845	114.0001
5/32	1.02173	110.5236	1.02516	112.2827	1.02856	114.0557
3/16	1.02184	110.5784	1.02526	112.3379	1.02866	114.1114
7/32	1.02194	110.6331	1.02537	112.3931	1.02877	114.1670
1/4	1.02205	110.6879	1.02548	112.4484	1.02888	114.2227
9/32	1.02216	110.7427	1.02558	112.5036	1.02898	114.2783
5/16	1.02227	110.7976	1.02569	112.5588	1.02909	114.3340
11/32	1.02237	110.8524	1.02580	112.6141	1.02919	114.3897
3/8	1.02248	110.9072	1.02590	112.6694	1.02930	114.4454
13/32	1.02259	110.9621	1.02601	112.7247	1.02940	114.5011
7/16	1.02269	111.0170	1.02612	112.7800	1.02951	114.5569
15/32	1.02280	111.0718	1.02622	112.8353	1.02962	114.6126
1/2	1.02291	111.1267	1.02633	112.8906	1.02972	114.6684
17/32	1.02302	111.1816	1.02644	112.9460	1.02983	114.7242
9/16	1.02312	111.2366	1.02654	113.0013	1.02993	114.7800
19/32	1.02323	111.2915	1.02665	113.0567	1.03004	114.8358
5/8	1.02334	111.3465	1.02675	113.1121	1.03014	114.8916
21/32	1.02345	111.4014	1.02686	113.1675	1.03025	114.9474
11/16	1.02355	111.4564	1.02697	113.2229	1.03036	115.0033
23/32	1.02366	111.5114	1.02707	113.2783	1.03046	115.0591
3/4	1.02377	111.5664	1.02718	113.3338	1.03057	115.1150
25/32	1.02387	111.6214	1.02729	113.3892	1.03067	115.1709
13/16	1.02398	111.6765	1.02739	113.4447	1.03078	115.2268
27/32	1.02409	111.7315	1.02750	113.5002	1.03088	115.2827
7/8	1.02419	111.7866	1.02760	113.5557	1.03099	115.3386
29/32	1.02430	111.8416	1.02771	113.6112	1.03109	115.3946
15/16	1.02441	111.8967	1.02782	113.6667	1.03120	115.4505
31/32	1.02452	111.9518	1.02792	113.7222	1.03130	115.5065
1	1.02462	112.0069	1.02803	113.7778	1.03141	115.5625

10′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.03141	115.5625	1.03476	117.3611	1.03809	119.1736
1/32	1.03151	115.6185	1.03487	117.4175	1.03819	119.2305
1/16	1.03162	115.6745	1.03497	117.4740	1.03830	119,2874
3/32	1.03172	115.7305	1.03508	117.5304	1.03840	119.3442
1/8	1.03183	115.7866	1.03518	117.5869	1.03850	119.4012
5/32	1.03193	115.8426	1.03528	117.6434	1.03861	119.4581
3/16	1.03204	115.8987	1.03539	117.6999	1.03871	119.5150
7/32	1.03214	115.9548	1.03549	117.7564	1.03881	119.5719
1/4	1.03225	116.0109	1.03560	117.8129	1.03892	119.6289
9/32	1.03235	116.0670	1.03570	117.8695	1.03902	119.6859
5/16	1.03246	116.1231	1.03580	117.9260	1.03912	119.7429
11/32	1.03256	116.1792	1.03591	117.9826	1.03923	119.7999
3/8	1.03267	116.2354	1.03601	118.0392	1.03933	119.8569
13/32	1.03277	116.2915	1.03612	118.0958	1.03943	119.9139
7/16	1.03288	116.3477	1.03622	118.1524	1.03954	119.9709
15/32	1.03298	116.4039	1.03633	118.2090	1.03964	120.0280
1/2	1.03309	116.4601	1.03643	118.2656	1.03974	120.0851
17/32	1.03319	116.5163	1.03653	118.3223	1.03985	120.1422
9/16	1.03330	116.5725	1.03664	118.3789	1.03995	120.1992
19/32	1.03340	116.6288	1.03674	118.4356	1.04005	120.2564
5/8	1.03351	116.6850	1.03685	118.4923	1.04016	120.3135
21/32	1.03361	116.7413	1.03695	118.5490	1.04026	120.3706
11/16	1.03372	116.7976	1.03705	118.6057	1.04036	120.4278
23/32	1.03382	116.8538	1.03716	118.6624	1.04047	120.4849
3/4	1.03393	116.9102	1.03726	118.7192	1.04057	120.5421
25/32	1.03403	116.9665	1.03736	118.7759	1.04067	120.5993
13/16	1.03414	117.0228	1.03747	118.8327	1.04078	120.6565
27/32	1.03424	117.0792	1.03757	118.8895	1.04088	120.7137
7/8	1.03434	117.1355	1.03768	118.9463	1.04098	120.7709
29/32	1.03445	117.1919	1.03778	119.0031	1.04108	120.8282
15/16	1.03455	117.2483	1.03788	119.0599	1.04119	120.8854
31/32	1.03466	117.3047	1.03799	119.1168	1.04129	120.9427
1	1.03476	117.3611	1.03809	119.1736	1.04139	121.0000

11′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.04139	121.0000	1.04467	122.8403	1.04792	124.6944
1/32	1.04150	121.0573	1.04477	122.8980	1.04802	124.7526
1/16	1.04160	121.1146	1.04487	122.9558	1.04813	124.8108
3/32	1.04170	121.1719	1.04498	123.0135	1.04823	124.8690
1/8	1.04180	121.2293	1.04508	123.0713	1.04833	124.9272
5/32	1.04191	121.2866	1.04518	123.1291	1.04843	124.9854
3/16	1.04201	121.3440	1.04528	123.1869	1.04853	125.0436
7/32	1.04211	121.4014	1.04538	123.2447	1.04863	125.1019
1/4	1.04221	121.4588	1.04549	123.3025	1.04873	125.1602
9/32	1.04232	121.5162	1.04559	123.3604	1.04883	125.2184
5/16	1.04242	121.5736	1.04569	123.4182	1.04894	125.2767
11/32	1.04252	121.6310	1.04579	123.4761	1.04904	125.3350
3/8	1.04262	121.6885	1.04589	123.5340	1.04914	125.3933
13/32	1.04273	121.7459	1.04599	123.5919	1.04924	125.4517
7/16	1.04283	121.8034	1.04610	123.6498	1.04934	125.5100
15/32	1.04293	121.8609	1.04620	123.7077	1.04944	125.5684
1/2	1.04303	121.9184	1.04630	123.7656	1.04954	125.6267
17/32	1.04314	121.9759	1.04640	123.8236	1.04964	125.6851
9/16	1.04324	122.0334	1.04650	123.8815	1.04974	125.7435
19/32	1.04334	122.0910	1.04660	123.9395	1.04984	125.8019
5/8	1.04344	122.1485	1.04671	123.9975	1.04994	125.8604
21/32	1.04355	122.2061	1.04681	124.0555	1.05005	125.9188
11/16	1.04365	122.2637	1.04691	124.1135	1.05015	125.9772
23/32	1.04375	122.3213	1.04701	124.1716	1.05025	126.0357
3/4	1.04385	122.3789	1.04711	124.2296	1.05035	126.0942
25/32	1.04396	122.4365	1.04721	124.2877	1.05045	126.1527
13/16	1.04406	122.4942	1.04732	124.3457	1.05055	126.2112
27/32	1.04416	122.5518	1.04742	124.4038	1.05065	126.2697
7/8	1.04426	122.6095	1.04752	124.4619	1.05075	126.3282
29/32	1.04436	122.6672	1.04762	124.5200	1.05085	126.3868
15/16	1.04447	122.7249	1.04772	124.5782	1.05095	126.4453
31/32	1.04457	122.7826	1.04782	124.6363	1.05105	126.5039
1	1.04467	122.8403	1.04792	124.6944	1.05115	126.5625

11′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.05115	126.5625	1.05436	128.4444	1.05754	130.3403
1/32	1.05125	126.6211	1.05446	128.5035	1.05764	130.3997
1/16	1.05135	126.6797	1.05456	128.5625	1.05774	130.4592
3/32	1.05145	126.7383	1.05466	128.6216	1.05784	130.5187
⅛	1.05155	126.7970	1.05476	128.6807	1.05794	130.5782
5/32	1.05165	126.8556	1.05486	128.7398	1.05803	130.6378
3/16	1.05176	126.9143	1.05496	128.7989	1.05813	130.6973
7/32	1.05186	126.9730	1.05506	128.8580	1.05823	130.7568
¼	1.05196	127.0317	1.05516	128.9171	1.05833	130.8164
9/32	1.05206	127.0904	1.05525	128.9762	1.05843	130.8760
5/16	1.05216	127.1491	1.05535	129.0354	1.05853	130.9356
11/32	1.05226	127.2079	1.05545	129.0946	1.05863	130.9952
⅜	1.05236	127.2666	1.05555	129.1538	1.05873	131.0548
13/32	1.05246	127.3254	1.05565	129.2130	1.05883	131.1144
7/16	1.05256	127.3841	1.05575	129.2722	1.05892	131.1741
15/32	1.05266	127.4429	1.05585	129.3314	1.05902	131.2337
½	1.05276	127.5017	1.05595	129.3906	1.05912	131.2934
17/32	1.05286	127.5606	1.05605	129.4499	1.05922	131.3531
9/16	1.05296	127.6194	1.05615	129.5091	1.05932	131.4128
19/32	1.05306	127.6782	1.05625	129.5684	1.05942	131.4725
⅝	1.05316	127.7371	1.05635	129.6277	1.05952	131.5322
21/32	1.05326	127.7960	1.05645	129.6870	1.05961	131.5920
11/16	1.05336	127.8548	1.05655	129.7463	1.05971	131.6517
23/32	1.05346	127.9137	1.05665	129.8057	1.05981	131.7115
¾	1.05356	127.9727	1.05675	129.8650	1.05991	131.7713
25/32	1.05366	128.0316	1.05685	129.9244	1.06001	131.8311
13/16	1.05376	128.0905	1.05694	129.9838	1.06011	131.8909
27/32	1.05386	128.1495	1.05704	130.0431	1.06021	131.9507
⅞	1.05396	128.2084	1.05714	130.1025	1.06030	132.0105
29/32	1.05406	128.2674	1.05724	130.1620	1.06040	132.0704
15/16	1.05416	128.3264	1.05734	130.2214	1.06050	132.1302
31/32	1.05426	128.3854	1.05744	130.2808	1.06060	132.1901
1	1.05436	128.4444	1.05754	130.3403	1.06070	132.2500

11′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.06070	132.2500	1.06383	134.1736	1.06695	136.1111
1/32	1.06080	132.3099	1.06393	134.2339	1.06704	136.1719
1/16	1.06089	132.3698	1.06403	134.2943	1.06714	136.2327
3/32	1.06099	132.4297	1.06413	134.3547	1.06724	136.2935
1/8	1.06109	132.4897	1.06422	134.4150	1.06733	136.3543
5/32	1.06119	132.5496	1.06432	134.4754	1.06743	136.4151
3/16	1.06129	132.6096	1.06442	134.5358	1.06753	136.4759
7/32	1.06139	132.6696	1.06452	134.5963	1.06762	136.5368
1/4	1.06148	132.7296	1.06461	134.6567	1.06772	136.5977
9/32	1.06158	132.7896	1.06471	134.7171	1.06782	136.6585
5/16	1.06168	132.8496	1.06481	134.7776	1.06792	136.7194
11/32	1.06178	132.9097	1.06491	134.8381	1.06801	136.7803
3/8	1.06188	132.9697	1.06500	134.8985	1.06811	136.8413
13/32	1.06197	133.0298	1.06510	134.9590	1.06821	136.9022
7/16	1.06207	133.0899	1.06520	135.0196	1.06830	136.9631
15/32	1.06217	133.1500	1.06530	135.0801	1.06840	137.0241
1/2	1.06227	133.2101	1.06539	135.1406	1.06850	137.0851
17/32	1.06237	133.2702	1.06549	135.2012	1.06859	137.1461
9/16	1.06246	133.3303	1.06559	135.2617	1.06869	137.2071
19/32	1.06256	133.3905	1.06568	135.3223	1.06878	137.2681
5/8	1.06266	133.4506	1.06578	135.3829	1.06888	137.3291
21/32	1.06276	133.5108	1.06588	135.4435	1.06898	137.3901
11/16	1.06286	133.5710	1.06598	135.5042	1.06907	137.4512
23/32	1.06295	133.6312	1.06607	135.5648	1.06917	137.5123
3/4	1.06305	133.6914	1.06617	135.6254	1.06927	137.5734
25/32	1.06315	133.7516	1.06627	135.6861	1.06936	137.6344
13/16	1.06325	133.8119	1.06636	135.7468	1.06946	137.6956
27/32	1.06335	133.8721	1.06646	135.8075	1.06956	137.7567
7/8	1.06344	133.9324	1.06656	135.8682	1.06965	137.8178
29/32	1.06354	133.9927	1.06666	135.9289	1.06975	137.8790
15/16	1.06364	134.0530	1.06675	135.9896	1.06985	137.9401
31/32	1.06374	134.1133	1.06685	136.0504	1.06994	138.0013
1	1.06383	134.1736	1.06695	136.1111	1.07004	138.0625

11′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.07004	138.0625	1.07311	140.0278	1.07615	142.0069
1/32	1.07013	138.1237	1.07320	140.0894	1.07625	142.0690
1/16	1.07023	138.1849	1.07330	140.1511	1.07634	142.1311
3/32	1.07033	138.2462	1.07339	140.2127	1.07644	142.1932
1/8	1.07042	138.3074	1.07349	140.2744	1.07653	142.2553
5/32	1.07052	138.3687	1.07358	140.3361	1.07663	142.3174
3/16	1.07062	138.4299	1.07368	140.3978	1.07672	142.3796
7/32	1.07071	138.4912	1.07378	140.4595	1.07682	142.4417
1/4	1.07081	138.5525	1.07387	140.5213	1.07691	142.5039
9/32	1.07090	138.6138	1.07397	140.5830	1.07701	142.5661
5/16	1.07100	138.6752	1.07406	140.6448	1.07710	142.6283
11/32	1.07110	138.7365	1.07416	140.7065	1.07720	142.6905
3/8	1.07119	138.7979	1.07425	140.7683	1.07729	142.7527
13/32	1.07129	138.8592	1.07435	140.8301	1.07739	142.8149
7/16	1.07138	138.9206	1.07444	140.8920	1.07748	142.8772
15/32	1.07148	138.9820	1.07454	140.9538	1.07758	142.9395
1/2	1.07158	139.0434	1.07463	141.0156	1.07767	143.0017
17/32	1.07167	139.1048	1.07473	141.0775	1.07777	143.0640
9/16	1.07177	139.1663	1.07482	141.1394	1.07786	143.1263
19/32	1.07186	139.2277	1.07492	141.2012	1.07795	143.1886
5/8	1.07196	139.2892	1.07501	141.2631	1.07805	143.2510
21/32	1.07205	139.3506	1.07511	141.3250	1.07814	143.3133
11/16	1.07215	139.4121	1.07520	141.3870	1.07824	143.3757
23/32	1.07225	139.4736	1.07530	141.4489	1.07833	143.4380
3/4	1.07234	139.5352	1.07539	141.5109	1.07843	143.5004
25/32	1.07244	139.5967	1.07549	141.5728	1.07852	143.5628
13/16	1.07253	139.6582	1.07558	141.6348	1.07862	143.6252
27/32	1.07263	139.7198	1.07568	141.6968	1.07871	143.6877
7/8	1.07272	139.7814	1.07577	141.7588	1.07880	143.7501
29/32	1.07282	139.8429	1.07587	141.8208	1.07890	143.8126
15/16	1.07292	139.9045	1.07596	141.8828	1.07899	143.8750
31/32	1.07301	139.9662	1.07606	141.9449	1.07909	143.9375
1	1.07311	140.0278	1.07615	142.0069	1.07918	144.0000

12′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.07918	144.0000	1.08219	146.0069	1.08517	148.0278
1/32	1.07928	144.0625	1.08228	146.0699	1.08526	148.0912
1/16	1.07937	144.1250	1.08237	146.1328	1.08536	148.1545
3/32	1.07946	144.1876	1.08247	146.1958	1.08545	148.2179
1/8	1.07956	144.2501	1.08256	146.2588	1.08554	148.2814
5/32	1.07965	144.3127	1.08265	146.3218	1.08564	148.3448
3/16	1.07975	144.3752	1.08275	146.3848	1.08573	148.4082
7/32	1.07984	144.4378	1.08284	146.4478	1.08582	148.4717
1/4	1.07993	144.5004	1.08293	146.5109	1.08591	148.5352
9/32	1.08003	144.5630	1.08303	146.5739	1.08601	148.5986
5/16	1.08012	144.6257	1.08312	146.6370	1.08610	148.6621
11/32	1.08022	144.6883	1.08322	146.7000	1.08619	148.7256
3/8	1.08031	144.7510	1.08331	146.7631	1.08629	148.7892
13/32	1.08040	144.8136	1.08340	146.8262	1.08638	148.8527
7/16	1.08050	144.8763	1.08350	146.8893	1.08647	148.9163
15/32	1.08059	144.9390	1.08359	146.9525	1.08656	148.9798
1/2	1.08069	145.0017	1.08368	147.0156	1.08666	149.0434
17/32	1.08078	145.0645	1.08378	147.0788	1.08675	149.1070
9/16	1.08087	145.1272	1.08387	147.1420	1.08684	149.1706
19/32	1.08097	145.1899	1.08396	147.2051	1.08693	149.2342
5/8	1.08106	145.2527	1.08405	147.2683	1.08703	149.2979
21/32	1.08116	145.3155	1.08415	147.3315	1.08712	149.3615
11/16	1.08125	145.3783	1.08424	147.3948	1.08721	149.4252
23/32	1.08134	145.4411	1.08433	147.4580	1.08730	149.4888
3/4	1.08144	145.5039	1.08443	147.5213	1.08740	149.5525
25/32	1.08153	145.5667	1.08452	147.5845	1.08749	149.6162
13/16	1.08162	145.6296	1.08461	147.6478	1.08758	149.6799
27/32	1.08172	145.6924	1.08471	147.7111	1.08767	149.7437
7/8	1.08181	145.7553	1.08480	147.7744	1.08777	149.8074
29/32	1.08191	145.8182	1.08489	147.8377	1.08786	149.8712
15/16	1.08200	145.8811	1.08499	147.9011	1.08795	149.9349
31/32	1.08209	145.9440	1.08508	147.9644	1.08804	149.9987
1	1.08219	146.0069	1.08517	148.0278	1.08814	150.0625

12′

Fractions of an Inch.	3″		4		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.08814	150.0625	1.09108	152.1111	1.09401	154.1736
1/32	1.08823	150.1263	1.09117	152.1754	1.09410	154.2383
1/16	1.08832	150.1901	1.09126	152.2396	1.09419	154.3030
3/32	1.08841	150.2540	1.09136	152.3039	1.09428	154.3677
⅛	1.08851	150.3178	1.09145	152.3682	1.09437	154.4324
5/32	1.08860	150.3817	1.09154	152.4325	1.09446	154.4971
3/16	1.08869	150.4456	1.09163	152.4968	1.09455	154.5619
7/32	1.08878	150.5094	1.09172	152.5611	1.09464	154.6266
¼	1.08887	150.5734	1.09181	152.6254	1.09473	154.6914
9/32	1.08897	150.6373	1.09190	152.6898	1.09482	154.7562
5/16	1.08906	150.7012	1.09200	152.7542	1.09491	154.8210
11/32	1.08915	150.7651	1.09209	152.8185	1.09501	154.8858
⅜	1.08924	150.8291	1.09218	152.8829	1.09510	154.9506
13/32	1.08933	150.8931	1.09227	152.9473	1.09519	155.0155
7/16	1.08943	150.9571	1.09236	153.0117	1.09528	155.0803
15/32	1.08952	151.0211	1.09245	153.0762	1.09537	155.1452
½	1.08961	151.0851	1.09255	153.1406	1.09546	155.2101
17/32	1.08970	151.1491	1.09264	153.2051	1.09555	155.2750
9/16	1.08979	151.2131	1.09273	153.2696	1.09564	155.3399
19/32	1.08989	151.2772	1.09282	153.3340	1.09573	155.4048
⅝	1.08998	151.3413	1.09291	153.3985	1.09582	155.4697
21/32	1.09007	151.4053	1.09300	153.4631	1.09591	155.5347
11/16	1.09016	151.4694	1.09309	153.5276	1.09600	155.5996
23/32	1.09025	151.5335	1.09318	153.5921	1.09609	155.6646
¾	1.09035	151.5977	1.09328	153.6567	1.09619	155.7296
25/32	1.09044	151.6618	1.09337	153.7213	1.09628	155.7946
13/16	1.09053	151.7259	1.09346	153.7858	1.09637	155.8596
27/32	1.09062	151.7901	1.09355	153.8504	1.09646	155.9246
⅞	1.09071	151.8543	1.09364	153.9150	1.09655	155.9897
29/32	1.09081	151.9185	1.09373	153.9797	1.09664	156.0547
15/16	1.09090	151.9827	1.09382	154.0443	1.09673	156.1198
31/32	1.09099	152.0469	1.09391	154.1089	1.09682	156.1849
1	1.09108	152.1111	1.09401	154.1736	1.09691	156.2500

12′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.09691	156.2500	1.09980	158.3403	1.10266	160.4444
1/32	1.09700	156.3151	1.09989	158.4058	1.10275	160.5104
1/16	1.09709	156.3802	1.09998	158.4714	1.10284	160.5764
3/32	1.09718	156.4454	1.10007	158.5370	1.10293	160.6424
1/8	1.09727	156.5105	1.10016	158.6025	1.10302	160.7084
5/32	1.09736	156.5757	1.10024	158.6681	1.10311	160.7745
3/16	1.09745	156.6409	1.10033	158.7338	1.10320	160.8405
7/32	1.09754	156.7061	1.10042	158.7994	1.10329	160.9066
1/4	1.09763	156.7713	1.10051	158.8650	1.10338	160.9727
9/32	1.09772	156.8365	1.10060	158.9307	1.10347	161.0387
5/16	1.09781	156.9017	1.10069	158.9963	1.10355	161.1048
11/32	1.09790	156.9670	1.10078	159.0620	1.10364	161.1710
3/8	1.09799	157.0322	1.10087	159.1277	1.10373	161.2371
13/32	1.09808	157.0975	1.10096	159.1934	1.10382	161.3032
7/16	1.09817	157.1628	1.10105	159.2591	1.10391	161.3694
15/32	1.09827	157.2281	1.10114	159.3249	1.10400	161.4356
1/2	1.09836	157.2934	1.10123	159.3906	1.10409	161.5017
17/32	1.09845	157.3587	1.10132	159.4564	1.10418	161.5679
9/16	1.09854	157.4241	1.10141	159.5222	1.10427	161.6341
19/32	1.09863	157.4894	1.10150	159.5880	1.10436	161.7004
5/8	1.09872	157.5548	1.10159	159.6538	1.10444	161.7666
21/32	1.09881	157.6202	1.10168	159.7196	1.10453	161.8329
11/16	1.09890	157.6856	1.10177	159.7854	1.10462	161.8991
23/32	1.09899	157.7510	1.10186	159.8512	1.10471	161.9654
3/4	1.09908	157.8164	1.10195	159.9171	1.10480	162.0317
25/32	1.09917	157.8818	1.10204	159.9830	1.10489	162.0980
13/16	1.09926	157.9473	1.10213	160.0489	1.10498	162.1643
27/32	1.09935	158.0128	1.10222	160.1148	1.10507	162.2306
7/8	1.09944	158.0782	1.10231	160.1807	1.10516	162.2970
29/32	1.09953	158.1437	1.10239	160.2466	1.10524	162.3633
15/16	1.09962	158.2092	1.10248	160.3125	1.10533	162.4297
31/32	1.09971	158.2747	1.10257	160.3785	1.10542	162.4961
1	1.09980	158.3403	1.10266	160.4444	1.10551	162.5625

12′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.10551	162.5625	1.10834	164.6944	1.11115	166.8403
1/32	1.10560	162.6289	1.10843	164.7613	1.11124	166.9076
1/16	1.10569	162.6953	1.10852	164.8282	1.11133	166.9749
3/32	1.10578	162.7618	1.10860	164.8950	1.11141	167.0422
⅛	1.10586	162.8282	1.10869	164.9619	1.11150	167.1095
5/32	1.10595	162.8947	1.10878	165.0288	1.11159	167.1768
3/16	1.10604	162.9612	1.10887	165.0957	1.11168	167.2442
7/32	1.10613	163.0277	1.10896	165.1627	1.11176	167.3115
¼	1.10622	163.0942	1.10904	165.2296	1.11185	167.3789
9/32	1.10631	163.1607	1.10913	165.2966	1.11194	167.4463
5/16	1.10640	163.2272	1.10922	165.3635	1.11203	167.5137
11/32	1.10648	163.2938	1.10931	165.4305	1.11211	167.5811
⅜	1.10657	163.3604	1.10940	165.4975	1.11220	167.6485
13/32	1.10666	163.4269	1.10948	165.5645	1.11229	167.7160
7/16	1.10675	163.4935	1.10957	165.6315	1.11237	167.7834
15/32	1.10684	163.5601	1.10966	165.6986	1.11246	167.8509
½	1.10693	163.6267	1.10975	165.7656	1.11255	167.9184
17/32	1.10702	163.6934	1.10984	165.8327	1.11264	167.9859
9/16	1.10710	163.7600	1.10992	165.8998	1.11272	168.0534
19/32	1.10719	163.8267	1.11001	165.9669	1.11281	168.1209
⅝	1.10728	163.8933	1.11010	166.0340	1.11290	168.1885
21/32	1.10737	163.9600	1.11019	166.1011	1.11299	168.2560
11/16	1.10746	164.0267	1.11027	166.1682	1.11307	168.3236
23/32	1.10755	164.0934	1.11036	166.2354	1.11316	168.3912
¾	1.10763	164.1602	1.11045	166.3025	1.11325	168.4588
25/32	1.10772	164.2269	1.11054	166.3697	1.11333	168.5264
13/16	1.10781	164.2936	1.11062	166.4369	1.11342	168.5940
27/32	1.10790	164.3604	1.11071	166.5041	1.11351	168.6616
⅞	1.10799	164.4272	1.11080	166.5713	1.11360	168.7293
29/32	1.10808	164.4940	1.11089	166.6385	1.11368	168.7969
15/16	1.10816	164.5608	1.11098	166.7058	1.11377	168.8646
31/32	1.10825	164.6276	1.11106	166.7730	1.11386	168.9323
1	1.10834	164.6944	1.11115	166.8403	1.11394	169.0000

13′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.11394	169.0000	1.11672	171.1736	1.11948	173.3611
1/32	1.11403	169.0677	1.11680	171.2418	1.11956	173.4297
1/16	1.11412	169.1354	1.11689	171.3099	1.11965	173.4983
3/32	1.11420	169.2032	1.11698	171.3781	1.11973	173.5669
1/8	1.11429	169.2709	1.11706	171.4463	1.11982	173.6355
5/32	1.11438	169.3387	1.11715	171.5145	1.11991	173.7042
3/16	1.11447	169.4065	1.11724	171.5827	1.11999	173.7728
7/32	1.11455	169.4743	1.11732	171.6509	1.12008	173.8415
1/4	1.11464	169.5421	1.11741	171.7192	1.12016	173.9102
9/32	1.11473	169.6099	1.11750	171.7874	1.12025	173.9788
5/16	1.11481	169.6778	1.11758	171.8557	1.12033	174.0476
11/32	1.11490	169.7456	1.11767	171.9240	1.12042	174.1163
3/8	1.11499	169.8135	1.11775	171.9923	1.12051	174.1850
13/32	1.11507	169.8814	1.11784	172.0606	1.12059	174.2538
7/16	1.11516	169.9492	1.11793	172.1289	1.12068	174.3225
15/32	1.11525	170.0172	1.11801	172.1973	1.12076	174.3913
1/2	1.11533	170.0851	1.11810	172.2656	1.12085	174.4601
17/32	1.11542	170.1530	1.11819	172.3340	1.12093	174.5289
9/16	1.11551	170.2209	1.11827	172.4024	1.12102	174.5977
19/32	1.11559	170.2889	1.11836	172.4708	1.12110	174.6665
5/8	1.11568	170.3569	1.11844	172.5392	1.12119	174.7354
21/32	1.11577	170.4249	1.11853	172.6076	1.12128	174.8042
11/16	1.11585	170.4929	1.11862	172.6760	1.12136	174.8731
23/32	1.11594	170.5609	1.11870	172.7445	1.12145	174.9420
3/4	1.11603	170.6289	1.11879	172.8129	1.12153	175.0109
25/32	1.11611	170.6969	1.11887	172.8814	1.12162	175.0798
13/16	1.11620	170.7650	1.11896	172.9499	1.12170	175.1487
27/32	1.11629	170.8331	1.11905	173.0184	1.12179	175.2176
7/8	1.11637	170.9011	1.11913	173.0869	1.12187	175.2866
29/32	1.11646	170.9692	1.11922	173.1554	1.12196	175.3555
15/16	1.11655	171.0374	1.11930	173.2240	1.12205	175.4245
31/32	1.11663	171.1055	1.11939	173.2925	1.12213	175.4935
1	1.11672	171.1736	1.11948	173.3611	1.12222	175.5625

13

Fractions of an Inch.	3"		4"		5"	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.12222	175.5625	1.12494	177.7778	1.12764	180.0069
1/32	1.12230	175.6315	1.12502	177.8472	1.12773	180.0768
1/16	1.12239	175.7005	1.12511	177.9167	1.12781	180.1467
3/32	1.12247	175.7696	1.12519	177.9862	1.12790	180.2166
1/8	1.12256	175.8387	1.12528	178.0557	1.12798	180.2866
5/32	1.12264	175.9077	1.12536	178.1252	1.12807	180.3565
3/16	1.12273	175.9768	1.12545	178.1947	1.12815	180.4265
7/32	1.12281	176.0459	1.12553	178.2642	1.12823	180.4964
1/4	1.12290	176.1150	1.12562	178.3338	1.12832	180.5664
9/32	1.12298	176.1841	1.12570	178.4033	1.12840	180.6364
5/16	1.12307	176.2533	1.12579	178.4729	1.12849	180.7064
11/32	1.12315	176.3224	1.12587	178.5425	1.12857	180.7764
3/8	1.12324	176.3916	1.12596	178.6121	1.12866	180.8465
13/32	1.12332	176.4608	1.12604	178.6817	1.12874	180.9165
7/16	1.12341	176.5300	1.12612	178.7513	1.12882	180.9866
15/32	1.12349	176.5992	1.12621	178.8210	1.12891	181.0566
1/2	1.12358	176.6684	1.12629	178.8906	1.12899	181.1267
17/32	1.12366	176.7376	1.12638	178.9603	1.12908	181.1968
9/16	1.12375	176.8069	1.12646	179.0300	1.12916	181.2670
19/32	1.12383	176.8761	1.12655	179.0997	1.12924	181.3371
5/8	1.12392	176.9454	1.12663	179.1694	1.12933	181.4072
21/32	1.12400	177.0147	1.12672	179.2391	1.12941	181.4774
11/16	1.12409	177.0840	1.12680	179.3088	1.12950	181.5476
23/32	1.12417	177.1533	1.12689	179.3786	1.12958	181.6177
3/4	1.12426	177.2227	1.12697	179.4484	1.12966	181.6879
25/32	1.12434	177.2920	1.12705	179.5181	1.12975	181.7581
13/16	1.12443	177.3614	1.12714	179.5879	1.12983	181.8284
27/32	1.12451	177.4307	1.12722	179.6577	1.12991	181.8986
7/8	1.12460	177.5001	1.12731	179.7275	1.13000	181.9689
29/32	1.12468	177.5695	1.12739	179.7974	1.13008	182.0391
15/16	1.12477	177.6389	1.12748	179.8672	1.13017	182.1094
31/32	1.12485	177.7083	1.12756	179.9371	1.13025	182.1797
1	1.12494	177.7778	1.12764	180.0069	1.13033	182.2500

13′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.11394	169.0000	1.11672	171.1736	1.11948	173.3611
1/32	1.11403	169.0677	1.11680	171.2418	1.11956	173.4297
1/16	1.11412	169.1354	1.11689	171.3099	1.11965	173.4983
3/32	1.11420	169.2032	1.11698	171.3781	1.11973	173.5669
⅛	1.11429	169.2709	1.11706	171.4463	1.11982	173.6355
5/32	1.11438	169.3387	1.11715	171.5145	1.11991	173.7042
3/16	1.11447	169.4065	1.11724	171.5827	1.11999	173.7728
7/32	1.11455	169.4743	1.11732	171.6509	1.12008	173.8415
¼	1.11464	169.5421	1.11741	171.7192	1.12016	173.9102
9/32	1.11473	169.6099	1.11750	171.7874	1.12025	173.9788
5/16	1.11481	169.6778	1.11758	171.8557	1.12033	174.0476
11/32	1.11490	169.7456	1.11767	171.9240	1.12042	174.1163
⅜	1.11499	169.8135	1.11775	171.9923	1.12051	174.1850
13/32	1.11507	169.8814	1.11784	172.0606	1.12059	174.2538
7/16	1.11516	169.9492	1.11793	172.1289	1.12068	174.3225
15/32	1.11525	170.0172	1.11801	172.1973	1.12076	174.3913
½	1.11533	170.0851	1.11810	172.2656	1.12085	174.4601
17/32	1.11542	170.1530	1.11819	172.3340	1.12093	174.5289
9/16	1.11551	170.2209	1.11827	172.4024	1.12102	174.5977
19/32	1.11559	170.2889	1.11836	172.4708	1.12110	174.6665
⅝	1.11568	170.3569	1.11844	172.5392	1.12119	174.7354
21/32	1.11577	170.4249	1.11853	172.6076	1.12128	174.8042
11/16	1.11585	170.4929	1.11862	172.6760	1.12136	174.8731
23/32	1.11594	170.5609	1.11870	172.7445	1.12145	174.9420
¾	1.11603	170.6289	1.11879	172.8129	1.12153	175.0109
25/32	1.11611	170.6969	1.11887	172.8814	1.12162	175.0798
13/16	1.11620	170.7650	1.11896	172.9499	1.12170	175.1487
27/32	1.11629	170.8331	1.11905	173.0184	1.12179	175.2176
⅞	1.11637	170.9011	1.11913	173.0869	1.12187	175.2866
29/32	1.11646	170.9692	1.11922	173.1554	1.12196	175.3555
15/16	1.11655	171.0374	1.11930	173.2240	1.12205	175.4245
31/32	1.11663	171.1055	1.11939	173.2925	1.12213	175.4935
1	1.11672	171.1736	1.11948	173.3611	1.12222	175.5625

13

Fractions of an Inch.	3"		4"		5"	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.12222	175.5625	1.12494	177.7778	1.12764	180.0069
1/32	1.12230	175.6315	1.12502	177.8472	1.12773	180.0768
1/16	1.12239	175.7005	1.12511	177.9167	1.12781	180.1467
3/32	1.12247	175.7696	1.12519	177.9862	1.12790	180.2166
1/8	1.12256	175.8387	1.12528	178.0557	1.12798	180.2866
5/32	1.12264	175.9077	1.12536	178.1252	1.12807	180.3565
3/16	1.12273	175.9768	1.12545	178.1947	1.12815	180.4265
7/32	1.12281	176.0459	1.12553	178.2642	1.12823	180.4964
1/4	1.12290	176.1150	1.12562	178.3338	1.12832	180.5664
9/32	1.12298	176.1841	1.12570	178.4033	1.12840	180.6364
5/16	1.12307	176.2533	1.12579	178.4729	1.12849	180.7064
11/32	1.12315	176.3224	1.12587	178.5425	1.12857	180.7764
3/8	1.12324	176.3916	1.12596	178.6121	1.12866	180.8465
13/32	1.12332	176.4608	1.12604	178.6817	1.12874	180.9165
7/16	1.12341	176.5300	1.12612	178.7513	1.12882	180.9866
15/32	1.12349	176.5992	1.12621	178.8210	1.12891	181.0566
1/2	1.12358	176.6684	1.12629	178.8906	1.12899	181.1267
17/32	1.12366	176.7376	1.12638	178.9603	1.12908	181.1968
9/16	1.12375	176.8069	1.12646	179.0300	1.12916	181.2670
19/32	1.12383	176.8761	1.12655	179.0997	1.12924	181.3371
5/8	1.12392	176.9454	1.12663	179.1694	1.12933	181.4072
21/32	1.12400	177.0147	1.12672	179.2391	1.12941	181.4774
11/16	1.12409	177.0840	1.12680	179.3088	1.12950	181.5476
23/32	1.12417	177.1533	1.12689	179.3786	1.12958	181.6177
3/4	1.12426	177.2227	1.12697	179.4484	1.12966	181.6879
25/32	1.12434	177.2920	1.12705	179.5181	1.12975	181.7581
13/16	1.12443	177.3614	1.12714	179.5879	1.12983	181.8284
27/32	1.12451	177.4307	1.12722	179.6577	1.12991	181.8986
7/8	1.12460	177.5001	1.12731	179.7275	1.13000	181.9689
29/32	1.12468	177.5695	1.12739	179.7974	1.13008	182.0391
15/16	1.12477	177.6389	1.12748	179.8672	1.13017	182.1094
31/32	1.12485	177.7083	1.12756	179.9371	1.13025	182.1797
1	1.12494	177.7778	1.12764	180.0069	1.13033	182.2500

13′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.13033	182.2500	1.13301	184.5069	1.13566	186.7778
1/32	1.13042	182.3203	1.13309	184.5777	1.13575	186.8490
1/16	1.13050	182.3907	1.13317	184.6485	1.13583	186.9202
3/32	1.13059	182.4610	1.13326	184.7192	1.13591	186.9914
1/8	1.13067	182.5314	1.13334	184.7900	1.13599	187.0626
5/32	1.13075	182.6017	1.13342	184.8608	1.13608	187.1339
3/16	1.13084	182.6721	1.13351	184.9317	1.13616	187.2051
7/32	1.13092	182.7425	1.13359	185.0025	1.13624	187.2764
1/4	1.13100	182.8129	1.13367	185.0734	1.13632	187.3477
9/32	1.13109	182.8834	1.13376	185.1442	1.13641	187.4190
5/16	1.13117	182.9538	1.13384	185.2151	1.13649	187.4903
11/32	1.13125	183.0243	1.13392	185.2860	1.13657	187.5616
3/8	1.13134	183.0947	1.13400	185.3569	1.13665	187.6329
13/32	1.13142	183.1652	1.13409	185.4278	1.13674	187.7043
7/16	1.13151	183.2357	1.13417	185.4987	1.13682	187.7756
15/32	1.13159	183.3062	1.13425	185.5697	1.13690	187.8470
1/2	1.13167	183.3767	1.13434	185.6406	1.13698	187.9184
17/32	1.13176	183.4473	1.13442	185.7116	1.13707	187.9898
9/16	1.13184	183.5178	1.13450	185.7826	1.13715	188.0612
19/32	1.13192	183.5884	1.13459	185.8536	1.13723	188.1327
5/8	1.13201	183.6590	1.13467	185.9246	1.13731	188.2041
21/32	1 13209	183.7296	1.13475	185.9956	1.13740	188.2756
11/16	1.13217	183.8002	1.13483	186.0667	1.13748	188.3470
23/32	1.13226	183.8708	1.13492	186.1377	1.13756	188.4185
3/4	1.13234	183.9414	1.13500	186.2088	1.13764	188.4900
25/32	1.13242	184.0121	1.13508	186.2798	1.13773	188.5615
13/16	1.13251	184.0827	1.13517	186.3509	1.13781	188.6331
27/32	1.13259	184.1534	1.13525	186.4220	1.13789	188.7046
7/8	1.13267	184.2241	1.13533	186.4932	1.13797	188.7762
29/32	1.13276	184.2948	1.13541	186.5643	1.13806	188.8477
15/16	1.13284	184.3655	1.13550	186.6354	1.13814	188.9193
31/32	1.13292	184.4362	1.13558	186.7066	1.13822	188.9909
1	1.13301	184.5069	1.13566	186.7778	1.13830	189.0625

13′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.13830	189.0625	1.14093	191.3611	1.14354	193.6736
1/32	1.13838	189.1341	1.14101	191.4332	1.14362	193.7461
1/16	1.13847	189.2058	1.14109	191.5052	1.14370	193.8186
3/32	1.13855	189.2774	1.14117	191.5773	1.14378	193.8911
1/8	1.13863	189.3491	1.14125	191.6494	1.14386	193.9637
5/32	1.13871	189.4207	1.14134	191.7215	1.14394	194.0362
3/16	1.13880	189.4924	1.14142	191.7936	1.14402	194.1088
7/32	1.13888	189.5641	1.14150	191.8658	1.14410	194.1813
1/4	1.13896	189.6359	1.14158	191.9379	1.14418	194.2539
9/32	1.13904	189.7076	1.14166	192.0101	1.14427	194.3265
5/16	1.13912	189.7793	1.14174	192.0823	1.14435	194.3991
11/32	1.13921	189.8511	1.14183	192.1545	1.14443	194.4717
3/8	1.13929	189.9229	1.14191	192.2267	1.14451	194.5444
13/32	1.13937	189.9946	1.14199	192.2989	1.14459	194.6170
7/16	1.13945	190.0664	1.14207	192.3711	1.14467	194.6897
15/32	1.13953	190.1382	1.14215	192.4434	1.14475	194.7624
1/2	1.13962	190.2101	1.14223	192.5156	1.14483	194.8351
17/32	1.13970	190.2819	1.14231	192.5879	1.14491	194.9078
9/16	1.13978	190.3538	1.14240	192.6602	1.14500	194.9805
19/32	1.13986	190.4256	1.14248	192.7325	1.14508	195.0532
5/8	1.13994	190.4975	1.14256	192.8048	1.14516	195.1260
21/32	1.14003	190.5694	1.14264	192.8771	1.14524	195.1987
11/16	1.14011	190.6413	1.14272	192.9495	1.14532	195.2715
23/32	1.14019	190.7132	1.14280	193.0218	1.14540	195.3443
3/4	1.14027	190.7852	1.14288	193.0942	1.14548	195.4171
25/32	1.14035	190.8571	1.14297	193.1666	1.14556	195.4899
13/16	1.14044	190.9291	1.14305	193.2390	1.14564	195.5627
27/32	1.14052	191.0010	1.14313	193.3114	1.14572	195.6356
7/8	1.14060	191.0730	1.14321	193.3838	1.14580	195.7084
29/32	1.14068	191.1450	1.14329	193.4562	1.14589	195.7813
15/16	1.14076	191.2170	1.14337	193.5287	1.14597	195.8542
31/32	1.14085	191.2891	1.14345	193.6011	1.14605	195.9271
1	1.14093	191.3611	1.14354	193.6736	1.14613	196.0000

14′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.14613	196.0000	1.14871	198.3403	1.15127	200.6944
1/32	1.14621	196.0729	1.14879	198.4136	1.15135	200.7682
1/16	1.14629	196.1459	1.14887	198.4870	1.15143	200.8420
3/32	1.14637	196.2188	1.14895	198.5604	1.15151	200.9159
1/8	1.14645	196.2918	1.14903	198.6338	1.15159	200.9897
5/32	1.14653	196.3648	1.14911	198.7072	1.15167	201.0635
3/16	1.14661	196.4377	1.14919	198.7806	1.15175	201.1374
7/32	1.14669	196.5107	1.14927	198.8541	1.15183	201.2113
1/4	1.14677	196.5838	1.14935	198.9275	1.15191	201.2852
9/32	1.14685	196.6568	1.14943	199.0010	1.15199	201.3591
5/16	1.14694	196.7298	1.14951	199.0745	1.15207	201.4330
11/32	1.14702	196.8029	1.14959	199.1480	1.15214	201.5069
3/8	1.14710	196.8760	1.14967	199.2215	1.15222	201.5808
13/32	1.14718	196.9491	1.14975	199.2950	1.15230	201.6548
7/16	1.14726	197.0222	1.14983	199.3685	1.15238	201.7288
15/32	1.14734	197.0953	1.14991	199.4421	1.15246	201.8027
1/2	1.14742	197.1684	1.14999	199.5156	1.15254	201.8767
17/32	1.14750	197.2415	1.15007	199.5892	1.15262	201.9507
9/16	1.14758	197.3147	1.15015	199.6628	1.15270	202.0248
19/32	1.14766	197.3879	1.15023	199.7364	1.15278	202.0988
5/8	1.14774	197.4610	1.15031	199.8100	1.15286	202.1729
21/32	1.14782	197.5342	1.15039	199.8836	1.15294	202.2469
11/16	1.14790	197.6074	1.15047	199.9573	1.15302	202.3210
23/32	1.14798	197.6807	1.15055	200.0309	1.15310	202.3951
3/4	1.14806	197.7539	1.15063	200.1046	1.15318	202.4692
25/32	1.14814	197.8272	1.15071	200.1783	1.15326	202.5433
13/16	1.14822	197.9004	1.15079	200.2520	1.15334	202.6174
27/32	1.14830	197.9737	1.15087	200.3257	1.15342	202.6916
7/8	1.14838	198.0470	1.15095	200.3994	1.15350	202.7657
29/32	1.14846	198.1203	1.15103	200.4732	1.15358	202.8399
15/16	1.14854	198.1936	1.15111	200.5469	1.15366	202.9141
31/32	1.14863	198.2669	1.15119	200.6207	1.15374	202.9883
1	1.14871	198.3403	1.15127	200.6944	1.15381	203.0625

14′

Fractions of an Inch.	3″		4		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.15381	203.0625	1.15635	205.4444	1.15886	207.8403
1/32	1.15389	203.1367	1.15643	205.5191	1.15894	207.9154
1/16	1.15397	203.2110	1.15650	205.5938	1.15902	207.9905
3/32	1.15405	203.2852	1.15658	205.6685	1.15910	208.0656
1/8	1.15413	203.3595	1.15666	205.7432	1.15918	208.1407
5/32	1.15421	203.4338	1.15674	205.8179	1.15926	208.2159
3/16	1.15429	203.5081	1.15682	205.8926	1.15934	208.2910
7/32	1.15437	203.5824	1.15690	205.9673	1.15941	208.3662
1/4	1.15445	203.6567	1.15698	206.0421	1.15949	208.4414
9/32	1.15453	203.7310	1.15706	206.1169	1.15957	208.5166
5/16	1.15461	203.8054	1.15714	206.1917	1.15965	208.5918
11/32	1.15469	203.8797	1.15721	206.2664	1.15973	208.6671
3/8	1.15477	203.9541	1.15729	206.3413	1.15981	208.7423
13/32	1.15485	204.0285	1.15737	206.4161	1.15988	208.8176
7/16	1.15492	204.1029	1.15745	206.4909	1.15996	208.8928
15/32	1.15500	204.1773	1.15753	206.5658	1.16004	208.9681
1/2	1.15508	204.2517	1.15761	206.6406	1.16012	209.0434
17/32	1.15516	204.3262	1.15769	206.7155	1.16020	209.1187
9/16	1.15524	204.4006	1.15777	206.7904	1.16027	209.1940
19/32	1.15532	204.4751	1.15784	206.8653	1.16035	209.2694
5/8	1.15540	204.5496	1.15792	206.9402	1.16043	209.3447
21/32	1.15548	204.6241	1.15800	207.0151	1.16051	209.4201
11/16	1.15556	204.6986	1.15808	207.0901	1.16059	209.4955
23/32	1.15564	204.7731	1.15816	207.1650	1.16067	209.5709
3/4	1.15572	204.8477	1.15824	207.2400	1.16074	209.6463
25/32	1.15579	204.9222	1.15832	207.3150	1.16082	209.7217
13/16	1.15587	204.9968	1.15839	207.3900	1.16090	209.7971
27/32	1.15595	205.0714	1.15847	207.4650	1.16098	209.8726
7/8	1.15603	205.1459	1.15855	207.5400	1.16106	209.9480
29/32	1.15611	205.2205	1.15863	207.6151	1.16113	210.0235
15/16	1.15619	205.2952	1.15871	207.6901	1.16121	210.0990
31/32	1.15627	205.3698	1.15879	207.7652	1.16129	210.1745
1	1.15635	205.4444	1.15886	207.8403	1.16137	210.2500

14′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.16137	210.2500	1.16386	212.6736	1.16633	215.1111
1/32	1.16145	210.3255	1.16393	212.7496	1.16641	215.1875
1/16	1.16152	210.4011	1.16401	212.8255	1.16649	215.2639
3/32	1.16160	210.4766	1.16409	212.9015	1.16656	215.3403
1/8	1.16168	210.5522	1.16417	212.9775	1.16664	215.4168
5/32	1.16176	210.6278	1.16424	213.0536	1.16672	215.4932
3/16	1.16184	210.7034	1.16432	213.1296	1.16679	215.5697
7/32	1.16191	210.7790	1.16440	213.2056	1.16687	215.6462
1/4	1.16199	210.8546	1.16448	213.2817	1.16695	215.7227
9/32	1.16207	210.9302	1.16455	213.3578	1.16702	215.7992
5/16	1.16215	211.0059	1.16463	213.4338	1.16710	215.8757
11/32	1.16223	211.0815	1.16471	213.5099	1.16718	215.9522
3/8	1.16230	211.1572	1.16479	213.5860	1.16726	216.0288
13/32	1.16238	211.2329	1.16486	213.6622	1.16733	216.1053
7/16	1.16246	211.3086	1.16494	213.7383	1.16741	216.1819
15/32	1.16254	211.3843	1.16502	213.8145	1.16749	216.2585
1/2	1.16261	211.4601	1.16510	213.8906	1.16756	216.3351
17/32	1.16269	211.5358	1.16517	213.9668	1.16764	216.4117
9/16	1.16277	211.6116	1.16525	214.0430	1.16772	216.4883
19/32	1.16285	211.6873	1.16533	214.1192	1.16779	216.5649
5/8	1.16293	211.7631	1.16541	214.1954	1.16787	216.6416
21/32	1.16300	211.8389	1.16548	214.2717	1.16795	216.7183
11/16	1.16308	211.9147	1.16556	214.3479	1.16802	216.7949
23/32	1.16316	211.9906	1.16564	214.4242	1.16810	216.8716
3/4	1.16324	212.0664	1.16571	214.5004	1.16818	216.9484
25/32	1.16331	212.1423	1.16579	214.5767	1.16825	217.0251
13/16	1.16339	212.2181	1.16587	214.6530	1.16833	217.1018
27/32	1.16347	212.2940	1.16595	214.7293	1.16841	217.1786
7/8	1.16355	212.3699	1.16602	214.8057	1.16849	217.2553
29/32	1.16362	212.4458	1.16610	214.8820	1.16856	217.3321
15/16	1.16370	212.5217	1.16618	214.9584	1.16864	217.4089
31/32	1.16378	212.5977	1.16625	215.0347	1.16872	217.4857
1	1.16386	212.6736	1.16633	215.1111	1.16879	217.5625

14′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.16879	217.5625	1.17124	220.0278	1.17367	222.5069
1⁄32	1.16887	217.6393	1.17131	220.1050	1.17375	222.5846
1⁄16	1.16895	217.7162	1.17139	220.1823	1.17382	222.6624
3⁄32	1.16902	217.7930	1.17147	220.2596	1.17390	222.7401
⅛	1.16910	217.8699	1.17154	220.3369	1.17397	222.8178
5⁄32	1.16918	217.9468	1.17162	220.4142	1.17405	222.8956
3⁄16	1.16925	218.0237	1.17170	220.4916	1.17413	222.9733
7⁄32	1.16933	218.1006	1.17177	220.5689	1.17420	223.0511
¼	1.16940	218.1775	1.17185	220.6463	1.17428	223.1289
9⁄32	1.16948	218.2545	1.17192	220.7236	1.17435	223.2067
5⁄16	1.16956	218.3314	1.17200	220.8010	1.17443	223.2845
11⁄32	1.16963	218.4084	1.17208	220.8784	1.17451	223.3624
⅜	1.16971	218.4854	1.17215	220.9558	1.17458	223.4402
13⁄32	1.16979	218.5623	1.17223	221.0333	1.17466	223.5181
7⁄16	1.16986	218.6393	1.17230	221.1107	1.17473	223.5959
15⁄32	1.16994	218.7164	1.17238	221.1882	1.17481	223.6738
½	1.17002	218.7934	1.17246	221.2656	1.17488	223.7517
17⁄32	1.17009	218.8704	1.17253	221.3431	1.17496	223.8297
9⁄16	1.17017	218.9475	1.17261	221.4206	1.17503	223.9076
19⁄32	1.17025	219.0246	1.17269	221.4981	1.17511	223.9855
⅝	1.17032	219.1017	1.17276	221.5756	1.17519	224.0635
21⁄32	1.17040	219.1788	1.17284	221.6532	1.17526	224.1414
11⁄16	1.17048	219.2559	1.17291	221.7307	1.17534	224.2194
23⁄32	1.17055	219.3330	1.17299	221.8083	1.17541	224.2974
¾	1.17063	219.4102	1.17306	221.8859	1.17549	224.3754
25⁄32	1.17070	219.4873	1.17314	221.9634	1.17556	224.4535
13⁄16	1.17078	219.5645	1.17322	222.0410	1.17564	224.5315
27⁄32	1.17086	219.6417	1.17329	222.1187	1.17571	224.6095
⅞	1.17093	219.7189	1.17337	222.1963	1.17579	224.6876
29⁄32	1.17101	219.7961	1.17344	222.2739	1.17587	224.7657
15⁄16	1.17109	219.8733	1.17352	222.3516	1.17594	224.8438
31⁄32	1.17116	219.9505	1.17360	222.4293	1.17602	224.9219
1	1.17124	220.0278	1.17367	222.5069	1.17609	225.0000

15′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.17609	225.0000	1.17850	227.5069	1.18089	230.0278
1/32	1.17617	225.0781	1.17857	227.5855	1.18096	230.1068
1/16	1.17624	225.1563	1.17865	227.6641	1.18104	230.1858
3/32	1.17632	225.2344	1.17872	227.7427	1.18111	230.2648
1/8	1.17639	225.3126	1.17880	227.8213	1.18119	230.3439
5/32	1.17647	225.3908	1.17887	227.8999	1.18126	230.4229
3/16	1.17654	225.4690	1.17895	227.9785	1.18134	230.5020
7/32	1.17662	225.5472	1.17902	228.0572	1.18141	230.5811
1/4	1.17669	225.6254	1.17910	228.1359	1.18149	230.6602
9/32	1.17677	225.7037	1.17917	228.2145	1.18156	230.7393
5/16	1.17684	225.7819	1.17925	228.2932	1.18164	230.8184
11/32	1.17692	225.8602	1.17932	228.3719	1.18171	230.8975
3/8	1.17700	225.9385	1.17940	228.4506	1.18178	230.9767
13/32	1.17707	226.0168	1.17947	228.5294	1.18186	231.0558
7/16	1.17715	226.0951	1.17955	228.6081	1.18193	231.1350
15/32	1.17722	226.1734	1.17962	228.6869	1.18201	231.2142
1/2	1.17730	226.2517	1.17970	228.7656	1.18208	231.2934
17/32	1.17737	226.3301	1.17977	228.8444	1.18216	231.3726
9/16	1.17745	226.4084	1.17984	228.9232	1.18223	231.4519
19/32	1.17752	226.4868	1.17992	229.0020	1.18230	231.5311
5/8	1.17760	226.5652	1.17999	229.0808	1.18238	231.6104
21/32	1.17767	226.6436	1.18007	229.1597	1.18245	231.6896
11/16	1.17775	226.7220	1.18014	229.2385	1.18253	231.7689
23/32	1.17782	226.8005	1.18022	229.3174	1.18260	231.8482
3/4	1.17790	226.8789	1.18029	229.3963	1.18268	231.9275
25/32	1.17797	226.9574	1.18037	229.4752	1.18275	232.0068
13/16	1.17805	227.0358	1.18044	229.5541	1.18282	232.0862
27/32	1.17812	227.1143	1.18052	229.6330	1.18290	232.1655
7/8	1.17820	227.1928	1.18059	229.7119	1.18297	232.2449
29/32	1.17827	227.2713	1.18067	229.7909	1.18305	232.3243
15/16	1.17835	227.3499	1.18074	229.8698	1.18312	232.4037
31/32	1.17842	227.4284	1.18082	229.9488	1.1832[illegible]	232.4831
1	1.17850	227.5069	1.18089	230.0278	1.18327	232.5625

15′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.18327	232.5625	1.18564	235.1111	1.18799	237.6736
1/32	1.18334	232.6419	1.18571	235.1910	1.18806	237.7539
1/16	1.18342	232.7214	1.18578	235.2709	1.18814	237.8342
3/32	1.18349	232.8008	1.18586	235.3508	1.18821	237.9146
1/8	1.18357	232.8803	1.18593	235.4307	1.18828	237.9949
5/32	1.18364	232.9598	1.18601	235.5106	1.18836	238.0753
3/16	1.18371	233.0393	1.18608	235.5905	1.18843	238.1556
7/32	1.18379	233.1188	1.18615	235.6705	1.18850	238.2360
1/4	1.18386	233.1984	1.18623	235.7504	1.18858	238.3164
9/32	1.18394	233.2779	1.18630	235.8304	1.18865	238.3968
5/16	1.18401	233.3574	1.18637	235.9104	1.18872	238.4772
11/32	1.18408	233.4370	1.18645	235.9904	1.18880	238.5577
3/8	1.18416	233.5166	1.18652	236.0704	1.18887	238.6381
13/32	1.18423	233.5962	1.18659	236.1505	1.18894	238.7186
7/16	1.18431	233.6758	1.18667	236.2305	1.18902	238.7991
15/32	1.18438	233.7554	1.18674	236.3106	1.18909	238.8796
1/2	1.18445	233.8351	1.18682	236.3906	1.18916	238.9601
17/32	1.18453	233.9147	1.18689	236.4707	1.18924	239.0406
9/16	1.18460	233.9944	1.18696	236.5508	1.18931	239.1211
19/32	1.18468	234.0741	1.18704	236.6309	1.18938	239.2017
5/8	1.18475	234.1538	1.18711	236.7110	1.18946	239.2822
21/32	1.18482	234.2335	1.18718	236.7912	1.18953	239.3628
11/16	1.18490	234.3132	1.18726	236.8713	1.18960	239.4434
23/32	1.18497	234.3929	1.18733	236.9515	1.18967	239.5240
3/4	1.18505	234.4727	1.18740	237.0317	1.18975	239.6046
25/32	1.18512	234.5524	1.18748	237.1119	1.18982	239.6852
13/16	1.18519	234.6322	1.18755	237.1921	1.18989	239.7659
27/32	1.18527	234.7120	1.18762	237.2723	1.18997	239.8465
7/8	1.18534	234.7918	1.18770	237.3525	1.19004	239.9272
29/32	1.18542	234.8716	1.18777	237.4328	1.19011	240.0079
15/16	1.18549	234.9514	1.18784	237.5130	1.19019	240.0886
31/32	1.18556	235.0313	1.18792	237.5933	1.19026	240.1693
1	1.18564	235.1111	1.18799	237.6736	1.19033	240.2500

15′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.19033	240.2500	1.19266	242.8403	1.19498	245.4444
1/32	1.19040	240.3307	1.19273	242.9214	1.19505	245.5260
1/16	1.19048	240.4115	1.19281	243.0026	1.19512	245.6077
3/32	1.19055	240.4922	1.19288	243.0838	1.19519	245.6893
1/8	1.19062	240.5730	1.19295	243.1650	1.19527	245.7709
5/32	1.19070	240.6538	1.19302	243.2463	1.19534	245.8526
3/16	1.19077	240.7346	1.19310	243.3275	1.19541	245.9343
7/32	1.19084	240.8154	1.19317	243.4088	1.19548	246.0160
1/4	1.19092	240.8963	1.19324	243.4900	1.19555	246.0977
9/32	1.19099	240.9771	1.19331	243.5713	1.19563	246.1794
5/16	1.19106	241.0580	1.19339	243.6526	1.19570	246.2611
11/32	1.19113	241.1388	1.19346	243.7339	1.19577	246.3428
3/8	1.19121	241.2197	1.19353	243.8152	1.19584	246.4246
13/32	1.19128	241.3006	1.19360	243.8965	1.19591	246.5064
7/16	1.19135	241.3815	1.19368	243.9779	1.19599	246.5881
15/32	1.19142	241.4625	1.19375	244.0593	1.19606	246.6699
1/2	1.19150	241.5434	1.19382	244.1406	1.19613	246.7517
17/32	1.19157	241.6244	1.19389	244.2220	1.19620	246.8336
9/16	1.19164	241.7053	1.19396	244.3034	1.19627	246.9154
19/32	1.19172	241.7863	1.19404	244.3848	1.19635	246.9972
5/8	1.19179	241.8673	1.19411	244.4663	1.19642	247.0791
21/32	1 19186	241.9483	1.19418	244.5477	1 19649	247.1610
11/16	1.19193	242.0293	1.19425	244.6292	1.19656	247.2429
23/32	1.19201	242.1104	1.19433	244.7106	1.19663	247.3248
3/4	1.19208	242.1914	1.19440	244.7921	1.19671	247.4067
25/32	1.19215	242.2725	1.19447	244.8736	1.19678	247.4886
13/16	1.19222	242.3535	1.19454	244.9551	1.19685	247.5706
27/32	1.19230	242.4346	1.19462	245.0366	1.19692	247.6525
7/8	1.19237	242.5157	1.19469	245.1182	1.19699	247.7345
29/32	1.19244	242.5968	1.19476	245.1997	1.19707	247.8165
15/16	1.19252	242 6780	1.19483	245.2813	1.19714	247.8985
31/32	1.19259	242.7591	1.19490	245.3629	1.19721	247.9805
1	1.19266	242.8403	1.19498	245.4444	1.19728	248.0625

15′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.19728	248.0625	1.19957	250.6944	1.20185	253.3403
1/32	1.19735	248.1445	1.19964	250.7769	1.20192	253.4232
1/16	1.19742	248.2266	1.19972	250.8594	1.20199	253.5061
3/32	1.19750	248.3087	1.19979	250.9419	1.20207	253.5890
1/8	1.19757	248.3907	1.19986	251.0244	1.20214	253.6720
5/32	1.19764	248.4728	1.19993	251.1069	1.20221	253.7549
3/16	1.19771	248.5549	1.20000	251.1895	1.20228	253.8379
7/32	1.19778	248.6371	1.20007	251.2720	1.20235	253.9209
1/4	1.19785	248.7192	1.20014	251.3546	1.20242	254.0039
9/32	1.19793	248.8013	1.20021	251.4372	1.20249	254.0869
5/16	1.19800	248.8835	1.20029	251.5198	1.20256	254.1699
11/32	1.19807	248.9657	1.20036	251.6024	1.20263	254.2530
3/8	1.19814	249.0479	1.20043	251.6850	1.20270	254.3360
13/32	1.19821	249.1301	1.20050	251.7676	1.20277	254.4191
7/16	1.19828	249.2123	1.20057	251.8503	1.20285	254.5022
15/32	1.19836	249.2945	1.20064	251.9329	1.20292	254.5853
1/2	1.19843	249.3767	1.20071	252.0156	1.20299	254.6684
17/32	1.19850	249.4590	1.20078	252.0983	1.20306	254.7515
9/16	1.19857	249.5413	1.20086	252.1810	1.20313	254.8347
19/32	1.19864	249.6235	1.20093	252.2637	1.20320	254.9178
5/8	1.19871	249.7058	1.20100	252.3465	1.20327	255.0010
21/32	1.19879	249.7881	1.20107	252.4292	1.20334	255.0842
11/16	1.19886	249.8705	1.20114	252.5120	1.20341	255.1673
23/32	1.19893	249.9528	1.20121	252.5947	1.20348	255.2505
3/4	1.19900	250.0352	1.20128	252.6775	1.20355	255.3338
25/32	1.19907	250.1175	1.20135	252.7603	1.20362	255.4170
13/16	1.19914	250.1999	1.20143	252.8431	1.20370	255.5002
27/32	1.19922	250.2823	1.20150	252.9260	1.20377	255.5835
7/8	1.19929	250.3647	1.20157	253.0088	1.20384	255.6668
29/32	1.19936	250.4471	1.20164	253.0916	1.20391	255.7501
15/16	1.19943	250.5295	1.20171	253.1745	1.20398	255.8334
31/32	1.19950	250.6120	1.20178	253.2574	1.20405	255.9167
1	1.19957	250.6944	1.20185	253.3403	1.20412	256.0000

16′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.20412	256.0000	1.20638	258.6736	1.20862	261.3611
1/32	1.20419	256.0833	1.20645	258.7574	1.20869	261.4453
1/16	1.20426	256.1667	1.20652	258.8412	1.20876	261.5295
3/32	1.20433	256.2501	1.20659	258.9250	1.20883	261.6138
1/8	1.20440	256.3334	1.20666	259.0088	1.20890	261.6980
5/32	1.20447	256.4168	1.20673	259.0926	1.20897	261.7823
3/16	1.20454	256.5002	1.20680	259.1765	1.20904	261.8666
7/32	1.20461	256.5837	1.20687	259.2603	1.20911	261.9509
1/4	1.20469	256.6671	1.20694	259.3442	1.20918	262.0352
9/32	1.20476	256.7505	1.20701	259.4281	1.20925	262.1195
5/16	1.20483	256.8340	1.20708	259.5120	1.20932	262.2038
11/32	1.20490	256.9175	1.20715	259.5959	1.20939	262.2881
3/8	1.20497	257.0010	1.20722	259.6798	1.20946	262.3725
13/32	1.20504	257.0845	1.20729	259.7637	1.20953	262.4569
7/16	1.20511	257.1680	1.20736	259.8477	1.20960	262.5413
15/32	1.20518	257.2515	1.20743	259.9316	1.20967	262.6257
1/2	1.20525	257.3351	1.20750	260.0156	1.20974	262.7101
17/32	1.20532	257.4186	1.20757	260.0996	1.20981	262.7945
9/16	1.20539	257.5022	1.20764	260.1836	1.20988	262.8789
19/32	1.20546	257.5858	1.20771	260.2676	1.20995	262.9634
5/8	1.20553	257.6694	1.20778	260.3517	1.21002	263.0479
21/32	1.20560	257.7530	1.20785	260.4357	1.21009	263.1323
11/16	1.20567	257.8366	1.20792	260.5198	1.21016	263.2168
23/32	1.20574	257.9203	1.20799	260.6038	1.21023	263.3013
3/4	1.20581	258.0039	1.20806	260.6879	1.21030	263.3859
25/32	1.20588	258.0876	1.20813	260.7720	1.21037	263.4704
13/16	1.20595	258.1713	1.20820	260.8561	1.21044	263.5549
27/32	1.20602	258.2549	1.20827	260.9403	1.21051	263.6395
7/8	1.20609	258.3386	1.20834	261.0244	1.21057	263.7241
29/32	1.20617	258.4224	1.20841	261.1086	1.21064	263.8087
15/16	1.20624	258.5061	1.20848	261.1927	1.21071	263.8933
31/32	1.20631	258.5899	1.20855	261.2769	1.21078	263.9779
1	1.20638	258.6736	1.20862	261.3611	1.21085	264.0625

16′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.21085	264.0625	1.21307	266.7778	1.21528	269.5069
1/32	1.21092	264.1471	1.21314	266.8629	1.21535	269.5925
1/16	1.21099	264.2318	1.21321	266.9479	1.21542	269.6780
3/32	1.21106	264.3165	1.21328	267.0330	1.21549	269.7635
1/8	1.21113	264.4012	1.21335	267.1182	1.21556	269.8491
5/32	1.21120	264.4858	1.21342	267.2033	1.21563	269.9346
3/16	1.21127	264.5706	1.21349	267.2884	1.21570	270.0202
7/32	1.21134	264.6553	1.21356	267.3736	1.21577	270.1058
1/4	1.21141	264.7400	1.21363	267.4588	1.21584	270.1914
9/32	1.21148	264.8248	1.21370	267.5440	1.21590	270.2770
5/16	1.21155	264.9095	1.21377	267.6292	1.21597	270.3627
11/32	1.21162	264.9943	1.21384	267.7144	1.21604	270.4483
3/8	1.21169	265.0791	1.21390	267.7996	1.21611	270.5340
13/32	1.21176	265.1639	1.21397	267.8848	1.21618	270.6196
7/16	1.21183	265.2487	1.21404	267.9701	1.21625	270.7053
15/32	1.21190	265.3336	1.21411	268.0553	1.21632	270.7910
1/2	1.21197	265.4184	1.21418	268.1406	1.21639	270.8767
17/32	1.21203	265.5033	1.21425	268.2259	1.21645	270.9625
9/16	1.21210	265.5881	1.21432	268.3112	1.21652	271.0482
19/32	1.21217	265.6730	1.21439	268.3965	1.21659	271.1340
5/8	1.21224	265.7579	1.21446	268.4819	1.21666	271.2197
21/32	1.21231	265.8428	1.21453	268.5672	1.21673	271.3055
11/16	1.21238	265.9278	1.21460	268.6526	1.21680	271.3913
23/32	1.21245	266.0127	1.21466	268.7380	1.21687	271.4771
3/4	1.21252	266.0977	1.21473	268.8234	1.21694	271.5629
25/32	1.21259	266.1826	1.21480	268.9088	1.21700	271.6488
13/16	1.21266	266.2676	1.21487	268.9942	1.21707	271.7346
27/32	1.21273	266.3526	1.21494	269.0796	1.21714	271.8205
7/8	1.21280	266.4376	1.21501	269.1650	1.21721	271.9064
29/32	1.21287	266.5226	1.21508	269.2505	1.21728	271.9922
15/16	1.21294	266.6077	1.21515	269.3360	1.21735	272.0782
31/32	1.21301	266.6927	1.21522	269.4214	1.21742	272.1641
1	1.21307	266.7778	1.21528	269.5069	1.21748	272.2500

16′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.21748	272.2500	1.21967	275.0069	1.22185	277.7778
1/32	1.21755	272.3359	1.21974	275.0933	1.22192	277.8646
1/16	1.21762	272.4219	1.21981	275.1797	1.22198	277.9514
3/32	1.21769	272.5079	1.21988	275.2661	1.22205	278.0383
1/8	1.21776	272.5939	1.21994	275.3525	1.22212	278.1251
5/32	1.21783	272.6799	1.22001	275.4390	1.22219	278.2120
3/16	1.21790	272.7659	1.22008	275.5254	1.22226	278.2989
7/32	1.21796	272.8519	1.22015	275.6119	1.22232	278.3857
1/4	1.21803	272.9379	1.22022	275.6984	1.22239	278.4727
9/32	1.21810	273.0240	1.22029	275.7848	1.22246	278.5596
5/16	1.21817	273.1101	1.22035	275.8713	1.22253	278.6465
11/32	1.21824	273.1961	1.22042	275.9579	1.22259	278.7335
3/8	1.21831	273.2822	1.22049	276.0444	1.22266	278.8204
13/32	1.21837	273.3683	1.22056	276.1309	1.22273	278.9074
7/16	1.21844	273.4545	1.22063	276.2175	1.22280	278.9944
15/32	1.21851	273.5406	1.22069	276.3040	1.22287	279.0814
1/2	1.21858	273.6267	1.22076	276.3906	1.22293	279.1684
17/32	1.21865	273.7129	1.22083	276.4772	1.22300	279.2554
9/16	1.21872	273.7991	1.22090	276.5638	1.22307	279.3425
19/32	1.21878	273.8853	1.22097	276.6505	1.22314	279.4295
5/8	1.21885	273.9715	1.22103	276.7371	1.22320	279.5166
21/32	1 21892	274.0577	1.22110	276.8237	1.22327	279.6037
11/16	1.21899	274.1439	1.22117	276.9104	1.22334	279.6908
23/32	1.21906	274.2302	1.22124	276.9971	1.22341	279.7779
3/4	1.21913	274.3164	1.22131	277.0838	1.22347	279.8650
25/32	1.21919	274.4027	1.22137	277.1705	1.22354	279.9522
13/16	1.21926	274.4890	1.22144	277.2572	1.22361	280.0393
27/32	1.21933	274.5753	1.22151	277.3439	1.22368	280.1265
7/8	1.21940	274.6616	1.22158	277.4307	1.22374	280.2137
29/32	1.21947	274.7479	1.22165	277.5174	1.22381	280.3008
15/16	1.21954	274.8342	1.22171	277.6042	1.22388	280.3880
31/32	1.21960	274.9206	1.22178	277.6910	1.22395	280.4753
1	1.21967	275.0069	1.22185	277.7778	1.22401	280.5625

16′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.22401	280.5625	1.22617	283.3611	1.22831	286.1736
1/32	1.22408	280.6497	1.22624	283.4488	1.22838	286.2617
1/16	1.22415	280.7370	1.22630	283.5365	1.22845	286.3499
3/32	1.22422	280.8243	1.22637	283.6242	1.22852	286.4380
1/8	1.22428	280.9116	1.22644	283.7119	1.22858	286.5262
5/32	1.22435	280.9989	1.22651	283.7996	1.22865	286.6143
3/16	1.22442	281.0862	1.22657	283.8874	1.22872	286.7025
7/32	1.22449	281.1735	1.22664	283.9752	1.22878	286.7907
1/4	1.22455	281.2609	1.22671	284.0629	1.22885	286.8789
9/32	1.22462	281.3482	1.22677	284.1507	1.22892	286.9671
5/16	1.22469	281.4356	1.22684	284.2385	1.22898	287.0554
11/32	1.22476	281.5230	1.22691	284.3263	1.22905	287.1436
3/8	1.22482	281.6104	1.22698	284.4142	1.22912	287.2319
13/32	1.22489	281.6978	1.22704	284.5020	1.22918	287.3202
7/16	1.22496	281.7852	1.22711	284.5899	1.22925	287.4084
15/32	1.22503	281.8726	1.22718	284.6777	1.22932	287.4968
1/2	1.22509	281.9601	1.22724	284.7656	1.22938	287.5851
17/32	1.22516	282.0475	1.22731	284 8535	1.22945	287.6734
9/16	1.22523	282.1350	1.22738	284.9414	1.22952	287.7617
19/32	1.22530	282.2225	1.22744	285.0294	1.22958	287.8501
5/8	1.22536	282.3100	1.22751	285.1173	1.22965	287.9385
21/32	1.22543	282.3975	1.22758	285.2052	1.22972	288.0269
11/16	1.22550	282.4851	1.22765	285.2932	1.22978	288.1153
23/32	1.22557	282.5726	1.22771	285.3812	1.22985	288.2037
3/4	1.22563	282.6602	1.22778	285.4692	1.22992	288.2921
25/32	1.22570	282.7477	1.22785	285.5572	1.22998	288.3805
13/16	1.22577	282.8353	1.22791	285.6452	1.23005	288.4690
27/32	1.22583	282.9229	1.22798	285.7332	1.23012	288.5575
7/8	1.22590	283.0105	1.22805	285.8213	1.23018	288.6459
29/32	1.22597	283.0982	1.22811	285.9093	1.23025	288.7344
15/16	1.22604	283.1858	1.22818	285.9974	1.23032	288.8229
31/32	1.22610	283.2734	1.22825	286.0855	1.23038	288.9115
1	1.22617	283.3611	1.22831	286.1736	1.23045	289.0000

17′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.23045	289.0000	1.23257	291.8403	1.23469	294.6944
1/32	1.23052	289.0885	1.23264	291.9293	1.23475	294.7839
1/16	1.23058	289.1771	1.23271	292.0183	1.23482	294.8733
3/32	1.23065	289.2657	1.23277	292.1073	1.23488	294.9627
1/8	1.23071	289.3543	1.23284	292.1963	1.23495	295.0522
5/32	1.23078	289.4429	1.23290	292.2853	1.23502	295.1417
3/16	1.23085	289.5315	1.23297	292.3744	1.23508	295.2311
7/32	1.23091	289.6201	1.23304	292.4634	1.23515	295.3206
1/4	1.23098	289.7088	1.23310	292.5525	1.23521	295.4102
9/32	1.23105	289.7974	1.23317	292.6416	1.23528	295.4997
5/16	1.23111	289.8861	1.23323	292.7307	1.23534	295.5892
11/32	1.23118	289.9748	1.23330	292.8198	1.23541	295.6788
3/8	1.23125	290.0635	1.23337	292.9090	1.23548	295.7683
13/32	1.23131	290.1522	1.23343	292.9981	1.23554	295.8579
7/16	1.23138	290.2409	1.23350	293.0873	1.23561	295.9475
15/32	1.23145	290.3297	1.23356	293.1764	1.23567	296.0371
1/2	1.23151	290.4184	1.23363	293.2656	1.23574	296.1267
17/32	1.23158	290.5072	1.23370	293.3548	1.23580	296.2164
9/16	1.23164	290.5959	1.23376	293.4440	1.23587	296.3060
19/32	1.23171	290.6847	1.23383	293.5333	1.23594	296.3957
5/8	1.23178	290.7735	1.23389	293.6225	1.23600	296.4854
21/32	1.23184	290.8624	1.23396	293.7118	1.23607	296.5750
11/16	1.23191	290.9512	1.23403	293.8010	1.23613	296.6647
23/32	1.23198	291.0400	1.23409	293.8903	1.23620	296.7545
3/4	1.23204	291.1289	1.23416	293.9796	1.23626	296.8442
25/32	1.23211	291.2178	1.23422	294.0689	1.23633	296.9339
13/16	1.23218	291.3067	1.23429	294.1582	1.23640	297.0237
27/32	1.23224	291.3956	1.23436	294.2476	1.23646	297.1135
7/8	1.23231	291.4845	1.23442	294.3369	1.23653	297.2032
29/32	1.23237	291.5734	1.23449	294.4263	1.23659	297.2930
15/16	1.23244	291.6624	1.23455	294.5157	1.23666	297.3828
31/32	1.23251	291.7513	1.23462	294.6050	1.23672	297.4727
1	1.23257	291.8403	1.23469	294.6944	1.23679	297.5625

17'

Fractions of an Inch.	3"		4		5"	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.23679	297.5625	1.23888	300.4444	1.24097	303.3403
1/32	1.23685	297.6524	1.23895	300.5347	1.24103	303.4310
1/16	1.23692	297.7422	1.23901	300.6250	1.24109	303.5217
3/32	1.23699	297.8321	1.23908	300.7153	1.24116	303.6125
1/8	1.23705	297.9220	1.23914	300.8057	1.24122	303.7032
5/32	1.23712	298.0119	1.23921	300.8960	1.24129	303.7940
3/16	1.23718	298.1018	1.23927	300.9864	1.24135	303.8848
7/32	1.23725	298.1917	1.23934	301.0767	1.24142	303.9756
1/4	1.23731	298.2817	1.23940	301.1671	1.24148	304.0664
9/32	1.23738	298.3716	1.23947	301.2575	1.24155	304.1572
5/16	1.23744	298.4616	1.23953	301.3479	1.24161	304.2481
11/32	1.23751	298.5516	1.23960	301.4383	1.24168	304.3389
3/8	1.23758	298.6416	1.23966	301.5288	1.24174	304.4298
13/32	1.23764	298.7316	1.23973	301.6192	1.24181	304.5207
7/16	1.23771	298.8216	1.23979	301.7097	1.24187	304.6116
15/32	1.23777	298.9117	1.23986	301.8001	1.24194	304.7025
1/2	1.23784	299.0017	1.23992	301.8906	1.24200	304.7934
17/32	1.23790	299.0918	1.23999	301.9811	1.24207	304.8843
9/16	1.23797	299.1819	1.24005	302.0716	1.24213	304.9753
19/32	1.23803	299.2720	1.24012	302.1622	1.24220	305.0663
5/8	1.23810	299.3621	1.24019	302.2527	1.24226	305.1572
21/32	1.23816	299.4522	1.24025	302.3433	1.24233	305.2482
11/16	1.23823	299.5423	1.24032	302.4338	1.24239	305.3392
23/32	1.23829	299.6325	1.24038	302.5244	1.24246	305.4302
3/4	1.23836	299.7227	1.24045	302.6150	1.24252	305.5213
25/32	1.23843	299.8128	1.24051	302.7056	1.24259	305.6123
13/16	1.23849	299.9030	1.24058	302.7963	1.24265	305.7034
27/32	1.23856	299.9932	1.24064	302.8869	1.24271	305.7944
7/8	1.23862	300.0834	1.24071	302.9775	1.24278	305.8855
29/32	1.23869	300.1737	1.24077	303.0682	1.24284	305.9766
15/16	1.23875	300.2639	1.24084	303.1589	1.24291	306.0677
31/32	1.23882	300.3542	1.24090	303.2496	1.24297	306.1589
1	1.23888	300.4444	1.24097	303.3403	1.24304	306.2500

17′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.24304	306.2500	1.24510	309.1736	1.24715	312.1111
1/32	1.24310	306.3412	1.24517	309.2652	1.24722	312.2031
1/16	1.24317	306.4323	1.24523	309.3568	1.24728	312.2952
3/32	1.24323	306.5235	1.24529	309.4484	1.24735	312.3872
1/8	1.24330	306.6147	1.24536	309.5400	1.24741	312.4793
5/32	1.24336	306.7059	1.24542	309.6317	1.24747	312.5714
3/16	1.24343	306.7971	1.24549	309.7233	1.24754	312.6634
7/32	1.24349	306.8884	1.24555	309.8150	1.24760	312.7555
1/4	1.24355	306.9796	1.24562	309.9067	1.24767	312.8477
9/32	1.24362	307.0709	1.24568	309.9984	1.24773	312.9398
5/16	1.24368	307.1621	1.24574	310.0901	1.24779	313.0319
11/32	1.24375	307.2534	1.24581	310.1818	1.24786	313.1241
3/8	1.24381	307.3447	1.24587	310.2735	1.24792	313.2163
13/32	1.24388	307.4360	1.24594	310.3653	1.24799	313.3084
7/16	1.24394	307.5274	1.24600	310.4571	1.24805	313.4006
15/32	1.24401	307.6187	1.24606	310.5488	1.24811	313.4928
1/2	1.24407	307.7101	1.24613	310.6406	1.24818	313.5851
17/32	1.24414	307.8014	1.24619	310.7324	1.24824	313.6773
9/16	1.24420	307.8928	1.24626	310.8242	1.24831	313.7696
19/32	1.24426	307.9842	1.24632	310.9161	1.24837	313.8618
5/8	1.24433	308.0756	1.24639	311.0079	1.24843	313.9541
21/32	1.24439	308.1671	1.24645	311.0998	1.24850	314.0464
11/16	1.24446	308.2585	1.24651	311.1917	1.24856	314.1387
23/32	1.24452	308.3499	1.24658	311.2835	1.24862	314.2310
3/4	1.24459	308.4414	1.24664	311.3754	1.24869	314.3234
25/32	1.24465	308.5329	1.24671	311.4673	1.24875	314.4157
13/16	1.24472	308.6244	1.24677	311.5593	1.24882	314.5081
27/32	1.24478	308.7159	1.24683	311.6512	1.24888	314.6004
7/8	1.24484	308.8074	1.24690	311.7432	1.24894	314.6928
29/32	1.24491	308.8989	1.24696	311.8351	1.24901	314.7852
15/16	1.24497	308.9905	1.24703	311.9271	1.24907	314.8776
31/32	1.24504	309.0820	1.24709	312.0191	1.24913	314.9701
1	1.24510	309.1736	1.24715	312.1111	1.24920	315.0625

17′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.24920	315.0625	1.25123	318.0278	1.25326	321.0069
1/32	1.24926	315.1550	1.25130	318.1207	1.25332	321.1003
1/16	1.24933	315.2474	1.25136	318.2136	1.25338	321.1936
3/32	1.24939	315.3399	1.25142	318.3065	1.25345	321.2870
1/8	1.24945	315.4324	1.25149	318.3994	1.25351	321.3803
5/32	1.24952	315.5249	1.25155	318.4924	1.25357	321.4737
3/16	1.24958	315.6174	1.25161	318.5853	1.25364	321.5671
7/32	1.24964	315.7100	1.25168	318.6783	1.25370	321.6605
1/4	1.24971	315.8025	1.25174	318.7713	1.25376	321.7539
9/32	1.24977	315.8951	1.25180	318.8643	1.25382	321.8473
5/16	1.24984	315.9877	1.25187	318.9573	1.25389	321.9408
11/32	1.24990	316.0802	1.25193	319.0503	1.25395	322.0342
3/8	1.24996	316.1729	1.25199	319.1433	1.25401	322.1277
13/32	1.25003	316.2655	1.25206	319.2364	1.25408	322.2212
7/16	1.25009	316.3581	1.25212	319.3295	1.25414	322.3147
15/32	1.25015	316.4507	1.25218	319.4225	1.25420	322.4082
1/2	1.25022	316.5434	1.25225	319.5156	1.25427	322.5017
17/32	1.25028	316.6361	1.25231	319.6087	1.25433	322.5953
9/16	1.25034	316.7288	1.25237	319.7019	1.25439	322.6888
19/32	1.25041	316.8215	1.25244	319.7950	1.25445	322.7824
5/8	1.25047	316.9142	1.25250	319.8881	1.25452	322.8760
21/32	1.25053	317.0069	1.25256	319.9813	1.25458	322.9696
11/16	1.25060	317.0996	1.25263	320.0745	1.25464	323.0632
23/32	1.25066	317.1924	1.25269	320.1676	1.25471	323.1568
3/4	1.25072	317.2852	1.25275	320.2609	1.25477	323.2504
25/32	1.25079	317.3779	1.25282	320.3541	1.25483	323.3441
13/16	1.25085	317.4707	1.25288	320.4473	1.25490	323.4377
27/32	1.25092	317.5635	1.25294	320.5405	1.25496	323.5314
7/8	1.25098	317.6564	1.25300	320.6338	1.25502	323.6251
29/32	1.25104	317.7492	1.25307	320.7271	1.25508	323.7188
15/16	1.25111	317.8420	1.25313	320.8203	1.25515	323.8125
31/32	1.25117	317.9349	1.25319	320.9136	1.25521	323.9063
1	1.25123	318.0278	1.25326	321.0069	1.25527	324.0000

18′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.25527	324.0000	1.25728	327.0069	1.25928	330.0278
1/32	1.25534	324.0938	1.25734	327.1011	1.25934	330.1224
1/16	1.25540	324.1875	1.25740	327.1953	1.25940	330.2170
3/32	1.25546	324.2813	1.25747	327.2896	1.25946	330.3117
1/8	1.25552	324.3751	1.25753	327.3838	1.25952	330.4064
5/32	1.25559	324.4689	1.25759	327.4780	1.25959	330.5010
3/16	1.25565	324.5627	1.25765	327.5723	1.25965	330.5957
7/32	1.25571	324.6566	1.25772	327.6666	1.25971	330.6904
1/4	1.25577	324.7504	1.25778	327.7609	1.25977	330.7852
9/32	1.25584	324.8443	1.25784	327.8551	1.25984	330.8799
5/16	1.25590	324.9382	1.25790	327.9495	1.25990	330.9746
11/32	1.25596	325.0321	1.25797	328.0438	1.25996	331.0694
3/8	1.25603	325.1260	1.25803	328.1381	1.26002	331.1642
13/32	1.25609	325.2199	1.25809	328.2325	1.26008	331.2590
7/16	1.25615	325.3138	1.25815	328.3268	1.26015	331.3538
15/32	1.25621	325.4078	1.25822	328.4212	1.26021	331.4486
1/2	1.25628	325.5017	1.25828	328.5156	1.26027	331.5434
17/32	1.25634	325.5957	1.25834	328.6100	1.26033	331.6382
9/16	1.25640	325.6897	1.25840	328.7045	1.26039	331.7331
19/32	1.25646	325.7837	1.25847	328.7989	1.26046	331.8280
5/8	1.25653	325.8777	1.25853	328.8933	1.26052	331.9229
21/32	1.25659	325.9717	1.25859	328.9878	1.26058	332.0177
11/16	1.25665	326.0658	1.25865	329.0823	1.26064	332.1127
23/32	1.25672	326.1598	1.25871	329.1768	1.26070	332.2076
3/4	1.25678	326.2539	1.25878	329.2713	1.26077	332.3025
25/32	1.25684	326.3480	1.25884	329.3658	1.26083	332.3975
13/16	1.25690	326.4421	1.25890	329.4603	1.26089	332.4924
27/32	1.25697	326.5362	1.25896	329.5549	1.26095	332.5874
7/8	1.25703	326.6303	1.25903	329.6494	1.26101	332.6824
29/32	1.25709	326.7245	1.25909	329.7440	1.26108	332.7774
15/16	1.25715	326.8186	1.25915	329.8386	1.26114	332.8724
31/32	1.25722	326.9128	1.25921	329.9332	1.26120	332.9675
1	1.25728	327.0069	1.25928	330.0278	1.26126	333.0625

18′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.26126	333.0625	1.26324	336.1111	1.26521	339.1736
1/32	1.26132	333.1576	1.26330	336.2066	1.26527	339.2695
1/16	1.26139	333.2526	1.26336	336.3021	1.26533	339.3655
3/32	1.26145	333.3477	1.26343	336.3976	1.26540	339.4614
⅛	1.26151	333.4428	1.26349	336.4932	1.26546	339.5574
5/32	1.26157	333.5379	1.26355	336.5887	1.26552	339.6534
3/16	1.26163	333.6331	1.26361	336.6843	1.26558	339.7494
7/32	1.26170	333.7282	1.26367	336.7798	1.26564	339.8454
¼	1.26176	333.8234	1.26373	336.8754	1.26570	339.9414
9/32	1.26182	333.9185	1.26380	336.9710	1.26576	340.0374
5/16	1.26188	334.0137	1.26386	337.0667	1.26582	340.1335
11/32	1.26194	334.1089	1.26392	337.1623	1.26589	340.2296
⅜	1.26201	334.2041	1.26398	337.2579	1.26595	340.3256
13/32	1.26207	334.2993	1.26404	337.3536	1.26601	340.4217
7/16	1.26213	334.3946	1.26410	337.4492	1.26607	340.5178
15/32	1.26219	334.4898	1.26417	337.5449	1.26613	340.6139
½	1.26225	334.5851	1.26423	337.6406	1.26619	340.7101
17/32	1.26232	334.6803	1.26429	337.7363	1.26625	340.8062
9/16	1.26238	334.7756	1.26435	337.8321	1.26632	340.9024
19/32	1.26244	334.8709	1.26441	337.9278	1.26638	340.9985
⅝	1.26250	334.9663	1.26447	338.0235	1.26644	341.0947
21/32	1.26256	335.0616	1.26453	338.1193	1.26650	341.1909
11/16	1.26262	335.1569	1.26460	338.2151	1.26656	341.2871
23/32	1.26269	335.2523	1.26466	338.3109	1.26662	341.3834
¾	1.26275	335.3477	1.26472	338.4067	1.26668	341.4796
25/32	1.26281	335.4430	1.26478	338.5025	1.26674	341.5759
13/16	1.26287	335.5384	1.26484	338.5983	1.26680	341.6721
27/32	1.26293	335.6339	1.26490	338.6942	1.26687	341.7684
⅞	1.26299	335.7293	1.26497	338.7900	1.26693	341.8647
29/32	1.26306	335.8247	1.26503	338.8859	1.26699	341.9610
15/16	1.26312	335.9202	1.26509	338.9818	1.26705	342.0573
31/32	1.26318	336.0156	1.26515	339.0777	1.26711	342.1537
1	1.26324	336.1111	1.26521	339.1736	1.26717	342.2500

18′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.26717	342.2500	1.26912	345.3403	1.27107	348.4444
1/32	1.26723	342.3464	1.26918	345.4371	1.27113	348.5417
1/16	1.26729	342.4427	1.26925	345.5339	1.27119	348.6389
3/32	1.26736	342.5391	1.26931	345.6307	1.27125	348.7362
1/8	1.26742	342.6355	1.26937	345.7275	1.27131	348.8334
5/32	1.26748	342.7319	1.26943	345.8244	1.27137	348.9307
3/16	1.26754	342.8284	1.26949	345.9213	1.27143	349.0280
7/32	1.26760	342.9248	1.26955	346.0181	1.27149	349.1253
1/4	1.26766	343.0213	1.26961	346.1150	1.27155	349.2227
9/32	1.26772	343.1177	1.26967	346.2119	1.27161	349.3200
5/16	1.26778	343.2142	1.26973	346.3088	1.27167	349.4173
11/32	1.26784	343.3107	1.26979	346.4058	1.27173	349.5147
3/8	1.26790	343.4072	1.26985	346.5027	1.27179	349.6121
13/32	1.26797	343.5038	1.26991	346.5997	1.27185	349.7095
7/16	1.26803	343.6003	1.26997	346.6966	1.27191	349.8069
15/32	1.26809	343.6968	1.27004	346.7936	1.27197	349.9043
1/2	1.26815	343.7934	1.27010	346.8906	1.27204	350.0017
17/32	1.26821	343.8900	1.27016	346.9876	1.27210	350.0992
9/16	1.26827	343.9866	1.27022	347.0847	1.27216	350.1966
19/32	1.26833	344.0832	1.27028	347.1817	1.27222	350.2941
5/8	1.26839	344.1798	1.27034	347.2788	1.27228	350.3916
21/32	1.26845	344.2764	1.27040	347.3758	1.27234	350.4891
11/16	1.26851	344.3731	1.27046	347.4729	1.27240	350.5866
23/32	1.26858	344.4697	1.27052	347.5700	1.27246	350.6841
3/4	1.26864	344.5664	1.27058	347.6671	1.27252	350.7817
25/32	1.26870	344.6631	1.27064	347.7642	1.27258	350.8792
13/16	1.26876	344.7598	1.27070	347.8614	1.27264	350.9768
27/32	1.26882	344.8565	1.27076	347.9585	1.27270	351.0744
7/8	1.26888	344.9532	1.27082	348.0557	1.27276	351.1720
29/32	1.26894	345.0500	1.27088	348.1528	1.27282	351.2696
15/16	1.26900	345.1467	1.27095	348.2500	1.27288	351.3672
31/32	1.26906	345.2435	1.27101	348.3472	1.27294	351.4649
1	1.26912	345.3403	1.27107	348.4444	1.27300	351.5625

18′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.27300	351.5625	1.27493	354.6944	1.27684	357.8403
1/32	1.27306	351.6602	1.27499	354.7925	1.27690	357.9388
1/16	1.27312	351.7578	1.27505	354.8907	1.27696	358.0374
3/32	1.27318	351.8555	1.27511	354.9888	1.27702	358.1359
1/8	1.27324	351.9532	1.27517	355.0869	1.27708	358.2345
5/32	1.27330	352.0510	1.27523	355.1851	1.27714	358.3331
3/16	1.27336	352.1487	1.27529	355.2832	1.27720	358.4317
7/32	1.27342	352.2464	1.27535	355.3814	1.27726	358.5303
1/4	1.27348	352.3442	1.27541	355.4796	1.27732	358.6289
9/32	1.27354	352.4420	1.27547	355.5778	1.27738	358.7275
5/16	1.27360	352.5397	1.27553	355.6760	1.27744	358.8262
11/32	1.27366	352.6375	1.27559	355.7743	1.27750	358.9249
3/8	1.27372	352.7354	1.27565	355.8725	1.27756	359.0235
13/32	1.27378	352.8332	1.27571	355.9708	1.27762	359.1222
7/16	1.27384	352.9310	1.27577	356.0690	1.27768	359.2209
15/32	1.27391	353.0289	1.27583	356.1673	1.27774	359.3197
1/2	1.27397	353.1267	1.27589	356.2656	1.27780	359.4184
17/32	1.27403	353.2246	1.27595	356.3639	1.27786	359.5172
9/16	1.27409	353.3225	1.27601	356.4623	1.27792	359.6159
19/32	1.27415	353.4204	1.27607	356.5606	1.27798	359.7147
5/8	1.27421	353.5183	1.27613	356.6590	1.27804	359.8135
21/32	1.27427	353.6163	1.27619	356.7573	1.27810	359.9123
11/16	1.27433	353.7142	1.27625	356.8557	1.27816	360.0111
23/32	1.27439	353.8122	1.27631	356.9541	1.27822	360.1099
3/4	1.27445	353.9102	1.27637	357.0525	1.27828	360.2088
25/32	1.27451	354.0081	1.27643	357.1509	1.27834	360.3076
13/16	1.27457	354.1061	1.27649	357.2494	1.27840	360.4065
27/32	1.27463	354.2042	1.27655	357.3478	1.27846	360.5054
7/8	1.27469	354.3022	1.27661	357.4463	1.27852	360.6043
29/32	1.27475	354.4002	1.27667	357.5448	1.27857	360.7032
15/16	1.27481	354.4983	1.27673	357.6433	1.27863	360.8021
31/32	1.27487	354.5964	1.27678	357.7418	1.27869	360.9010
1	1.27493	354.6944	1.27684	357.8403	1.27875	361.0000

19′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.27875	361.0000	1.28065	364.1736	1.28255	367.3611
1/32	1.27881	361.0990	1.28071	364.2730	1.28261	367.4609
1/16	1.27887	361.1979	1.28077	364.3724	1.28266	367.5608
3/32	1.27893	361.2969	1.28083	364.4718	1.28272	367.6607
1/8	1.27899	361.3959	1.28089	364.5713	1.28278	367.7605
5/32	1.27905	361.4950	1.28095	364.6707	1.28284	367.8604
3/16	1.27911	361.5940	1.28101	364.7702	1.28290	367.9603
7/32	1.27917	361.6930	1.28107	364.8697	1.28296	368.0602
1/4	1.27923	361.7921	1.28113	364.9692	1.28302	368.1602
9/32	1.27929	361.8912	1.28119	365.0687	1.28308	368.2601
5/16	1.27935	361.9903	1.28125	365.1682	1.28314	368.3601
11/32	1.27941	362.0894	1.28131	365.2677	1.28320	368.4600
3/8	1.27947	362.1885	1.28136	365.3673	1.28325	368.5600
13/32	1.27953	362.2876	1.28142	365.4669	1.28331	368.6600
7/16	1.27959	362.3867	1.28148	365.5664	1.28337	368.7600
15/32	1.27965	362.4859	1.28154	365.6660	1.28343	368.8600
1/2	1.27970	362.5851	1.28160	365.7656	1.28349	368.9601
17/32	1.27976	362.6843	1.28166	365.8652	1.28355	369.0601
9/16	1.27982	362.7834	1.28172	365.9649	1.28361	369.1602
19/32	1.27988	362.8827	1.28178	366.0645	1.28367	369.2603
5/8	1.27994	362.9819	1.28184	366.1642	1.28373	369.3604
21/32	1.28000	363.0811	1.28190	366.2638	1.28378	369.4605
11/16	1.28006	363.1804	1.28196	366.3635	1.28384	369.5606
23/32	1.28012	363.2796	1.28202	366.4632	1.28390	369.6607
3/4	1.28018	363.3789	1.28207	366.5629	1.28396	369.7609
25/32	1.28024	363.4782	1.28213	366.6627	1.28402	369.8610
13/16	1.28030	363.5775	1.28219	366.7624	1.28408	369.9612
27/32	1.28036	363.6768	1.28225	366.8621	1.28414	370.0614
7/8	1.28042	363.7761	1.28231	366.9619	1.28420	370.1616
29/32	1.28048	363.8755	1.28237	367.0617	1.28425	370.2618
15/16	1.28054	363.9749	1.28243	367.1615	1.28431	370.3620
31/32	1.28059	364.0742	1.28249	367.2613	1.28437	370.4622
1	1.28065	364.1736	1.28255	367.3611	1.28443	370.5625

19′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.28443	370.5625	1.28631	373.7778	1.28817	377.0069
1/32	1.28449	370.6628	1.28637	373.8785	1.28823	377.1081
1/16	1.28455	370.7630	1.28642	373.9792	1.28829	377.2092
3/32	1.28461	370.8633	1.28648	374.0799	1.28835	377.3104
1/8	1.28467	370.9637	1.28654	374.1807	1.28841	377.4116
5/32	1.28472	371.0640	1.28660	374.2814	1.28847	377.5128
3/16	1.28478	371.1643	1.28666	374.3822	1.28852	377.6140
7/32	1.28484	371.2647	1.28672	374.4830	1.28858	377.7152
1/4	1.28490	371.3650	1.28677	374.5838	1.28864	377.8164
9/32	1.28496	371.4654	1.28683	374.6846	1.28870	377.9177
5/16	1.28502	371.5658	1.28689	374.7854	1.28876	378.0189
11/32	1.28508	371.6662	1.28695	374.8862	1.28881	378.1202
3/8	1.28514	371.7666	1.28701	374.9871	1.28887	378.2215
13/32	1.28519	371.8670	1.28707	375.0880	1.28893	378.3228
7/16	1.28525	371.9675	1.28712	375.1888	1.28899	378.4241
15/32	1.28531	372.0679	1.28718	375.2897	1.28905	378.5254
1/2	1.28537	372.1684	1.28724	375.3906	1.28911	378.6267
17/32	1.28543	372.2689	1.28730	375.4915	1.28916	378.7281
9/16	1.28549	372.3694	1.28736	375.5925	1.28922	378.8295
19/32	1.28555	372.4699	1.28742	375.6934	1.28928	378.9308
5/8	1.28560	372.5704	1.28748	375.7944	1.28934	379.0322
21/32	1.28566	372.6710	1.28753	375.8954	1.28940	379.1336
11/16	1.28572	372.7715	1.28759	375.9963	1.28945	379.2351
23/32	1.28578	372.8721	1.28765	376.0973	1.28951	379.3365
3/4	1.28584	372.9727	1.28771	376.1984	1.28957	379.4379
25/32	1.28590	373.0732	1.28777	376.2994	1.28963	379.5394
13/16	1.28596	373.1739	1.28783	376.4004	1.28969	379.6409
27/32	1.28601	373.2745	1.28788	376.5015	1.28974	379.7424
7/8	1.28607	373.3751	1.28794	376.6025	1.28980	379.8439
29/32	1.28613	373.4758	1.28800	376.7036	1.28986	379.9454
15/16	1.28619	373.5764	1.28806	376.8047	1.28992	380.0469
31/32	1.28625	373.6771	1.28812	376.9058	1.28998	380.1484
1	1.28631	373.7778	1.28817	377.0069	1.29003	380.2500

19′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.29003	380.2500	1.29189	383.5069	1.29373	386.7778
1/32	1.29009	380.3516	1.29194	383.6089	1.29379	386.8802
1/16	1.29015	380.4532	1.29200	383.7110	1.29385	386.9827
3/32	1.29021	380.5547	1.29206	383.8130	1.29390	387.0851
1/8	1.29027	380.6564	1.29212	383.9150	1.29396	387.1876
5/32	1.29032	380.7580	1.29218	384.0171	1.29402	387.2901
3/16	1.29038	380.8596	1.29223	384.1192	1.29408	387.3926
7/32	1.29044	380.9613	1.29229	384.2213	1.29413	387.4951
1/4	1.29050	381.0629	1.29235	384.3234	1.29419	387.5977
9/32	1.29056	381.1646	1.29241	384.4255	1.29425	387.7002
5/16	1.29061	381.2663	1.29246	384.5276	1.29431	387.8028
11/32	1.29067	381.3680	1.29252	384.6297	1.29436	387.9053
3/8	1.29073	381.4697	1.29258	384.7319	1.29442	388.0079
13/32	1.29079	381.5715	1.29264	384.8340	1.29448	388.1105
7/16	1.29085	381.6732	1.29269	384.9362	1.29454	388.2131
15/32	1.29090	381.7750	1.29275	385.0384	1.29459	388.3158
1/2	1.29096	381.8767	1.29281	385.1406	1.29465	388.4184
17/32	1.29102	381.9785	1.29287	385.2428	1.29471	388.5211
9/16	1.29108	382.0803	1.29292	385.3451	1.29476	388.6237
19/32	1.29114	382.1821	1.29298	385.4473	1.29482	388.7264
5/8	1.29119	382.2840	1.29304	385.5496	1.29488	388.8291
21/32	1.29125	382.3858	1.29310	385.6519	1.29494	388.9318
11/16	1.29131	382.4877	1.29316	385.7542	1.29499	389.0345
23/32	1.29137	382.5895	1.29321	385.8565	1.29505	389.1373
3/4	1.29142	382.6914	1.29327	385.9588	1.29511	389.2400
25/32	1.29148	382.7933	1.29333	386.0611	1.29517	389.3428
13/16	1.29154	382.8952	1.29339	386.1634	1.29522	389.4456
27/32	1.29160	382.9971	1.29344	386.2658	1.29528	389.5483
7/8	1.29166	383.0991	1.29350	386.3682	1.29534	389.6512
29/32	1.29171	383.2010	1.29356	386.4705	1.29540	389.7540
15/16	1.29177	383.3030	1.29362	386.5729	1.29545	389.8568
31/32	1.29183	383.4050	1.29367	386.6754	1.29551	389.9596
1	1.29189	383.5069	1.29373	386.7778	1.29557	390.0625

19′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.29557	390.0625	1.29740	393.3611	1.29922	396.6736
1/32	1.29562	390.1654	1.29745	393.4644	1.29927	396.7774
1/16	1.29568	390.2683	1.29751	393.5677	1.29933	396.8811
3/32	1.29574	390.3712	1.29757	393.6711	1.29939	396.9849
1/8	1.29580	390.4741	1.29762	393.7744	1.29944	397.0887
5/32	1.29585	390.5770	1.29768	393.8778	1.29950	397.1924
3/16	1.29591	390.6799	1.29774	393.9811	1.29956	397.2963
7/32	1.29597	390.7829	1.29779	394.0845	1.29961	397.4001
1/4	1.29602	390.8859	1.29785	394.1879	1.29967	397.5039
9/32	1.29608	390.9888	1.29791	394.2913	1.29973	397.6078
5/16	1.29614	391.0918	1.29797	394.3948	1.29978	397.7116
11/32	1.29620	391.1948	1.29802	394.4982	1.29984	397.8155
3/8	1.29625	391.2979	1.29808	394.6017	1.29990	397.9194
13/32	1.29631	391.4009	1.29814	394.7051	1.29995	398.0233
7/16	1.29637	391.5039	1.29819	394.8086	1.30001	398.1272
15/32	1.29643	391.6070	1.29825	394.9121	1.30007	398.2311
1/2	1.29648	391.7101	1.29831	395.0156	1.30012	398.3351
17/32	1.29654	391.8132	1.29836	395.1191	1.30018	398.4390
9/16	1.29660	391.9163	1.29842	395.2227	1.30024	398.5430
19/32	1.29665	392.0194	1.29848	395.3262	1.30029	398.6470
5/8	1.29671	392.1225	1.29853	395.4298	1.30035	398.7510
21/32	1.29677	392.2256	1.29859	395.5334	1.30041	398.8550
11/16	1.29683	392.3288	1.29865	395.6370	1.30046	398.9590
23/32	1.29688	392.4320	1.29871	395.7406	1.30052	399.0630
3/4	1.29694	392.5352	1.29876	395.8442	1.30058	399.1671
25/32	1.29700	392.6384	1.29882	395.9478	1.30063	399.2712
13/16	1.29705	392.7416	1.29888	396.0515	1.30069	399.3752
27/32	1.29711	392.8448	1.29893	396.1551	1.30075	399.4793
7/8	1.29717	392.9480	1.29899	396.2588	1.30080	399.5834
29/32	1.29722	393.0513	1.29905	396.3625	1.30086	399.6876
15/16	1.29728	393.1545	1.29910	396.4662	1.30092	399.7917
31/32	1.29734	393.2578	1.29916	396.5699	1.30097	399.8958
1	1.29740	393.3611	1.29922	396.6736	1.30103	400.0000

20′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.30103	400.0000	1.30284	403.3403	1.30463	406.6944
1/32	1.30109	400.1042	1.30289	403.4449	1.30469	406.7995
1/16	1.30114	400.2084	1.30295	403.5495	1.30475	406.9045
3/32	1.30120	400.3126	1.30300	403.6541	1.30480	407.0096
1/8	1.30126	400.4168	1.30306	403.7588	1.30486	407.1147
5/32	1.30131	400.5210	1.30312	403.8635	1.30491	407.2198
3/16	1.30137	400.6252	1.30317	403.9681	1.30497	407.3249
7/32	1.30143	400.7295	1.30323	404.0728	1.30503	407.4300
1/4	1.30148	400.8338	1.30329	404.1775	1.30508	407.5352
9/32	1.30154	400.9380	1.30334	404.2822	1.30514	407.6403
5/16	1.30160	401.0423	1.30340	404.3870	1.30519	407.7455
11/32	1.30165	401.1467	1.30345	404.4917	1.30525	407.8506
3/8	1.30171	401.2510	1.30351	404.5965	1.30531	407.9558
13/32	1.30176	401.3553	1.30357	404.7012	1.30536	408.0610
7/16	1.30182	401.4597	1.30362	404.8060	1.30542	408.1663
15/32	1.30188	401.5640	1.30368	404.9108	1.30547	408.2715
1/2	1.30193	401.6684	1.30374	405.0156	1.30553	408.3767
17/32	1.30199	401.7728	1.30379	405.1204	1.30559	408.4820
9/16	1.30205	401.8772	1.30385	405.2253	1.30564	408.5873
19/32	1.30210	401.9816	1.30390	405.3301	1.30570	408.6926
5/8	1.30216	402.0860	1.30396	405.4350	1.30575	408.7979
21/32	1.30222	402.1905	1.30402	405.5399	1.30581	408.9032
11/16	1.30227	402.2949	1.30407	405.6448	1.30587	409.0085
23/32	1.30233	402.3994	1.30413	405.7497	1.30592	409.1138
3/4	1.30239	402.5039	1.30419	405.8546	1.30598	409.2192
25/32	1.30244	402.6084	1.30424	405.9595	1.30603	409.3246
13/16	1.30250	402.7129	1.30430	406.0645	1.30609	409.4299
27/32	1.30255	402.8174	1.30435	406.1694	1.30615	409.5353
7/8	1.30261	402.9220	1.30441	406.2744	1.30620	409.6407
29/32	1.30267	403.0265	1.30447	406.3794	1.30626	409.7462
15/16	1.30272	403.1311	1.30452	406.4844	1.30631	409.8516
31/32	1.30278	403.2357	1.30458	406.5894	1.30637	409.9570
1	1.30284	403.3403	1.30463	406.6944	1.30643	410.0625

20′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.30643	410.0625	1.30821	413.4444	1.30998	416.8403
1/32	1.30648	410.1680	1.30826	413.5504	1.31004	416.9466
1/16	1.30654	410.2735	1.30832	413.6563	1.31010	417.0530
3/32	1.30659	410.3790	1.30838	413.7622	1.31015	417.1593
⅛	1.30665	410.4845	1.30843	413.8682	1.31021	417.2657
5/32	1.30670	410.5900	1.30849	413.9741	1.31026	417.3721
3/16	1.30676	410.6956	1.30854	414.0801	1.31032	417.4785
7/32	1.30682	410.8011	1.30860	414.1861	1.31037	417.5850
¼	1.30687	410.9067	1.30865	414.2921	1.31043	417.6914
9/32	1.30693	411.0123	1.30871	414.3981	1.31048	417.7979
5/16	1.30698	411.1179	1.30876	414.5042	1.31054	417.9043
11/32	1.30704	411.2235	1.30882	414.6102	1.31059	418.0108
⅜	1.30709	411.3291	1.30888	414.7163	1.31065	418.1173
13/32	1.30715	411.4347	1.30893	414.8223	1.31070	418.2238
7/16	1.30721	411.5404	1.30899	414.9284	1.31076	418.3303
15/32	1.30726	411.6461	1.30904	415.0345	1.31081	418.4369
½	1.30732	411.7517	1.30910	415.1406	1.31087	418.5434
17/32	1.30737	411.8574	1.30915	415.2468	1.31093	418.6500
9/16	1.30743	411.9631	1.30921	415.3529	1.31098	418.7565
19/32	1.30748	412.0689	1.30926	415.4590	1.31104	418.8631
⅝	1.30754	412.1746	1.30932	415.5652	1.31109	418.9697
21/32	1.30760	412.2803	1.30938	415.6714	1.31115	419.0763
11/16	1.30765	412.3861	1.30943	415.7776	1.31120	419.1830
23/32	1.30771	412.4919	1.30949	415.8838	1.31126	419.2896
¾	1.30776	412.5977	1.30954	415.9900	1.31131	419.3963
25/32	1.30782	412.7035	1.30960	416.0963	1.31137	419.5029
13/16	1.30787	412.8093	1.30965	416.2025	1.31142	419.6096
27/32	1.30793	412.9151	1.30971	416.3088	1.31148	419.7163
⅞	1.30799	413.0209	1.30976	416.4150	1.31153	419.8230
29/32	1.30804	413.1268	1.30982	416.5213	1.31159	419.9297
15/16	1.30810	413.2327	1.30987	416.6276	1.31164	420.0365
31/32	1.30815	413.3385	1.30993	416.7339	1.31170	420.1432
1	1.30821	413.4444	1.30998	416.8403	1.31175	420.2500

20′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.31175	420.2500	1.31352	423.6736	1.31527	427.1111
1/32	1.31181	420.3568	1.31357	423.7808	1.31533	427.2188
1/16	1.31186	420.4636	1.31363	423.8880	1.31538	427.3264
3/32	1.31192	420.5704	1.31368	423.9953	1.31543	427.4341
1/8	1.31197	420.6772	1.31374	424.1025	1.31549	427.5418
5/32	1.31203	420.7840	1.31379	424.2098	1.31554	427.6495
3/16	1.31208	420.8909	1.31385	424.3171	1.31560	427.7572
7/32	1.31214	420.9977	1.31390	424.4244	1.31565	427.8649
1/4	1.31219	421.1046	1.31396	424.5317	1.31571	427.9727
9/32	1.31225	421.2115	1.31401	424.6390	1.31576	428.0804
5/16	1.31231	421.3184	1.31406	424.7463	1.31582	428.1882
11/32	1.31236	421.4253	1.31412	424.8537	1.31587	428.2960
3/8	1.31242	421.5322	1.31417	424.9610	1.31593	428.4038
13/32	1.31247	421.6392	1.31423	425.0684	1.31598	428.5116
7/16	1.31253	421.7461	1.31428	425.1758	1.31604	428.6194
15/32	1.31258	421.8531	1.31434	425.2832	1.31609	428.7272
1/2	1.31264	421.9601	1.31439	425.3906	1.31615	428.8351
17/32	1.31269	422.0671	1.31445	425.4981	1.31620	428.9429
9/16	1.31275	422.1741	1.31450	425.6055	1.31625	429.0508
19/32	1.31280	422.2811	1.31456	425.7130	1.31631	429.1587
5/8	1.31286	422.3881	1.31461	425.8204	1.31636	429.2666
21/32	1.31291	422.4952	1.31467	425.9279	1.31642	429.3745
11/16	1.31297	422.6022	1.31472	426.0354	1.31647	429.4824
23/32	1.31302	422.7093	1.31478	426.1429	1.31653	429.5904
3/4	1.31308	422.8164	1.31483	426.2504	1.31658	429.6984
25/32	1.31313	422.9235	1.31489	426.3580	1.31664	429.8063
13/16	1.31319	423.0306	1.31494	426.4655	1.31669	429.9143
27/32	1.31324	423.1378	1.31500	426.5731	1.31675	430.0223
7/8	1.31330	423.2449	1.31505	426.6807	1.31680	430.1303
29/32	1.31335	423.3521	1.31511	426.7883	1.31685	430.2383
15/16	1.31341	423.4592	1.31516	426.8959	1.31691	430.3464
31/32	1.31346	423.5664	1.31522	427.0035	1.31696	430.4544
1	1.31352	423.6736	1.31527	427.1111	1.31702	430.5625

20′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.31702	430.5625	1.31876	434.0278	1.32049	437.5069
1/32	1.31707	430.6706	1.31881	434.1363	1.32055	437.6159
1/16	1.31713	430.7787	1.31887	434.2448	1.32060	437.7249
3/32	1.31718	430.8868	1.31892	434.3534	1.32065	437.8338
1/8	1.31724	430.9949	1.31898	434.4619	1.32071	437.9428
5/32	1.31729	431.1030	1.31903	434.5705	1.32076	438.0518
3/16	1.31735	431.2112	1.31908	434.6791	1.32082	438.1608
7/32	1.31740	431.3193	1.31914	434.7877	1.32087	438.2699
1/4	1.31745	431.4275	1.31919	434.8963	1.32092	438.3789
9/32	1.31751	431.5357	1.31925	435.0049	1.32098	438.4880
5/16	1.31756	431.6439	1.31930	435.1135	1.32103	438.5970
11/32	1.31762	431.7521	1.31936	435.2222	1.32109	438.7061
3/8	1.31767	431.8604	1.31941	435.3308	1.32114	438.8152
13/32	1.31773	431.9686	1.31946	435.4395	1.32119	438.9243
7/16	1.31778	432.0768	1.31952	435.5482	1.32125	439.0334
15/32	1.31783	432.1851	1.31957	435.6569	1.32130	439.1426
1/2	1.31789	432.2934	1.31963	435.7656	1.32136	439.2517
17/32	1.31794	432.4017	1.31968	435.8744	1.32141	439.3609
9/16	1.31800	432.5100	1.31973	435.9831	1.32146	439.4701
19/32	1.31805	432.6183	1.31979	436.0919	1.32152	439.5793
5/8	1.31811	432,7267	1.31984	436.2006	1.32157	439.6885
21/32	1.31816	432.8350	1.31990	436.3094	1.32163	439.7977
11/16	1.31822	432.9434	1.31995	436.4182	1.32168	439.9069
23/32	1.31827	433.0518	1.32001	436.5270	1.32173	440.0162
3/4	1.31832	433.1602	1.32006	436.6359	1.32179	440.1254
25/32	1.31838	433.2686	1.32011	436.7447	1.32184	440.2347
13/16	1.31843	433.3770	1.32017	436.8535	1.32190	440.3440
27/32	1.31849	433.4854	1.32022	436.9624	1.32195	440.4533
7/8	1.31854	433.5939	1.32028	437.0713	1.32200	440.5626
29/32	1.31860	433.7023	1.32033	437.1802	1.32206	440.6719
15/16	1.31865	433.8108	1.32038	437.2891	1.32211	440.7813
31/32	1.31870	433.9193	1.32044	437.3980	1.32217	440.8906
1	1.31876	434 0278	1.32049	437.5069	1.32222	441.0000

21′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.32222	441.0000	1.32394	444.5069	1.32565	448.0278
1/32	1.32227	441.1094	1.32399	444.6168	1.32571	448.1380
1/16	1.32233	441.2188	1.32405	444.7266	1.32576	448.2483
3/32	1.32238	441.3282	1.32410	444.8364	1.32581	448.3586
1/8	1.32243	441.4376	1.32415	444.9463	1.32587	448.4689
5/32	1.32249	441.5470	1.32421	445.0562	1.32592	448.5792
3/16	1.32254	441.6565	1.32426	445.1660	1.32597	448.6895
7/32	1.32260	441.7660	1.32431	445.2759	1.32603	448.7998
1/4	1.32265	441.8754	1.32437	445.3859	1.32608	448.9102
9/32	1.32270	441.9849	1.32442	445.4958	1.32613	449.0205
5/16	1.32276	442.0944	1.32448	445.6057	1.32619	449.1309
11/32	1.32281	442.2039	1.32453	445.7157	1.32624	449.2413
3/8	1.32287	442.3135	1.32458	445.8256	1.32629	449.3517
13/32	1.32292	442.4230	1.32464	445.9356	1.32635	449.4621
7/16	1.32297	442.5326	1.32469	446.0456	1.32640	449.5725
15/32	1.32303	442.6422	1.32474	446.1556	1.32645	449.6830
1/2	1.32308	442.7517	1.32480	446.2656	1.32651	449.7934
17/32	1.32313	442.8613	1.32485	446.3757	1.32656	449.9039
9/16	1.32319	442.9709	1.32490	446.4857	1.32661	450.0144
19/32	1.32324	443.0806	1.32496	446.5958	1.32667	450.1248
5/8	1.32330	443.1902	1.32501	446.7058	1.32672	450.2354
21/32	1.32335	443.2999	1.32506	446.8159	1.32677	450.3459
11/16	1.32340	443.4095	1.32512	446.9260	1.32683	450.4564
23/32	1.32346	443.5192	1.32517	447.0361	1.32688	450.5670
3/4	1.32351	443.6289	1.32522	447.1463	1.32693	450.6775
25/32	1.32356	443.7386	1.32528	447.2564	1.32699	450.7881
13/16	1.32362	443.8483	1.32533	447.3666	1.32704	450.8987
27/32	1.32367	443.9581	1.32539	447.4767	1.32709	451.0093
7/8	1.32372	444.0678	1.32544	447.5869	1.32715	451.1199
29/32	1.32378	444.1776	1.32549	447.6971	1.32720	451.2305
15/16	1.32383	444.2874	1.32555	447.8073	1.32725	451.3412
31/32	1.32389	444.3971	1.32560	447.9175	1.32731	451.4518
1	1.32394	444.5069	1.32565	448.0278	1.32736	451.5625

21′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.32736	451.5625	1.32906	455.1111	1.33075	458.6736
1/32	1.32741	451.6732	1.32911	455.2222	1.33080	458.7852
1/16	1.32747	451.7839	1.32916	455.3334	1.33086	458.8967
3/32	1.32752	451.8946	1.32922	455.4445	1.33091	459.0083
1/8	1.32757	452.0053	1.32927	455.5557	1.33096	459.1199
5/32	1.32762	452.1161	1.32932	455.6668	1.33102	459.2315
3/16	1.32768	452.2268	1.32938	455.7780	1.33107	459.3431
7/32	1.32773	452.3376	1.32943	455.8892	1.33112	459.4548
1/4	1.32778	452.4484	1.32948	456.0004	1.33117	459.5664
9/32	1.32784	452.5591	1.32954	456.1117	1.33123	459.6781
5/16	1.32789	452.6699	1.32959	456.2229	1.33128	459.7897
11/32	1.32794	452.7808	1.32964	456.3342	1.33133	459.9014
3/8	1.32800	452.8916	1.32969	456.4454	1.33139	460.0131
13/32	1.32805	453.0024	1.32975	456.5567	1.33144	460.1248
7/16	1.32810	453.1133	1.32980	456.6680	1.33149	460.2366
15/32	1.32816	453.2242	1.32985	456.7793	1.33154	460.3483
1/2	1.32821	453.3351	1.32991	456.8906	1.33160	460.4601
17/32	1.32826	453.4460	1.32996	457.0020	1.33165	460.5718
9/16	1.32832	453.5569	1.33001	457.1133	1.33170	460.6836
19/32	1.32837	453.6678	1.33006	457.2247	1.33175	460.7954
5/8	1.32842	453.7788	1.33012	457.3360	1.33181	460.9072
21/32	1.32848	453.8897	1.33017	457.4474	1.33186	461.0190
11/16	1.32853	454.0007	1.33022	457.5588	1.33191	461.1309
23/32	1.32858	454.1117	1.33028	457.6703	1.33196	461.2427
3/4	1.32863	454.2227	1.33033	457.7817	1.33202	461.3546
25/32	1.32869	454.3337	1.33038	457.8931	1.33207	461.4665
13/16	1.32874	454.4447	1.33043	458.0046	1.33212	461.5784
27/32	1.32879	454.5557	1.33049	458.1161	1.33218	461.6903
7/8	1.32885	454.6668	1.33054	458.2275	1.33223	461.8022
29/32	1.32890	454.7778	1.33059	458.3390	1.33228	461.9141
15/16	1.32895	454.8889	1.33065	458.4505	1.33233	462.0261
31/32	1.32901	455.0000	1.33070	458.5621	1.33239	462.1380
1	1.32906	455.1111	1.33075	458.6736	1.33244	462.2500

21′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.33244	462.2500	1.33412	465.8403	1.33579	469.4444
1/32	1.33249	462.3620	1.33417	465.9527	1.33584	469.5573
1/16	1.33254	462.4740	1.33422	466.0651	1.33590	469.6702
3/32	1.33260	462.5860	1.33428	466.1776	1.33595	469.7830
1/8	1.33265	462.6980	1.33433	466.2900	1.33600	469.8959
5/32	1.33270	462.8101	1.33438	466.4025	1.33605	470.0088
3/16	1.33275	462.9221	1.33443	466.5150	1.33611	470.1218
7/32	1.33281	463.0342	1.33449	466.6275	1.33616	470.2347
1/4	1.33286	463.1463	1.33454	466.7400	1.33621	470.3477
9/32	1.33291	463.2584	1.33459	466.8525	1.33626	470.4606
5/16	1.33296	463.3705	1.33464	466.9651	1.33631	470.5736
11/32	1.33302	463.4826	1.33469	467.0776	1.33637	470.6866
3/8	1.33307	463.5947	1.33475	467.1902	1.33642	470.7996
13/32	1.33312	463.7069	1.33480	467.3028	1.33647	470.9126
7/16	1.33317	463.8190	1.33485	467.4154	1.33652	471.0256
15/32	1.33323	463.9312	1.33490	467.5280	1.33657	471.1387
1/2	1.33328	464.0434	1.33496	467.6406	1.33663	471.2517
17/32	1.33333	464.1556	1.33501	467.7533	1.33668	471.3648
9/16	1.33338	464.2678	1.33506	467.8659	1.33673	471.4779
19/32	1.33344	464.3801	1.33511	467.9786	1.33678	471.5910
5/8	1.33349	464.4923	1.33517	468.0913	1.33683	471.7041
21/32	1.33354	464.6046	1.33522	468.2039	1.33689	471.8172
11/16	1.33359	464.7168	1.33527	468.3167	1.33694	471.9304
23/32	1.33365	464.8291	1.33532	468.4294	1.33699	472.0435
3/4	1.33370	464.9414	1.33537	468.5421	1.33704	472.1567
25/32	1.33375	465.0537	1.33543	468.6548	1.33710	472.2699
13/16	1.33380	465.1660	1.33548	468.7676	1.33715	472.3831
27/32	1.33386	465.2784	1.33553	468.8804	1.33720	472.4963
7/8	1.33391	465.3907	1.33558	468.9932	1.33725	472.6095
29/32	1.33396	465.5031	1.33564	469.1060	1.33730	472.7227
15/16	1.33401	465.6155	1.33569	469.2188	1.33736	472.8360
31/32	1.33407	465.7279	1.33574	469.3316	1.33741	472.9492
1	1.33412	465.8403	1.33579	469.4444	1.33746	473.0625

21′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.33746	473.0625	1.33912	476.6944	1.34077	480.3403
1/32	1.33751	473.1758	1.33917	476.8082	1.34083	480.4544
1/16	1.33756	473.2891	1.33922	476.9219	1.34088	480.5686
3/32	1.33762	473.4024	1.33928	477.0357	1.34093	480.6828
1/8	1.33767	473.5157	1.33933	477.1494	1.34098	480.7970
5/32	1.33772	473.6291	1.33938	477.2632	1.34103	480.9112
3/16	1.33777	473.7424	1.33943	477.3770	1.34108	481.0254
7/32	1.33782	473.8558	1.33948	477.4908	1.34114	481.1397
1/4	1.33788	473.9692	1.33953	477.6046	1.34119	481.2539
9/32	1.33793	474.0826	1.33959	477.7184	1.34124	481.3682
5/16	1.33798	474.1960	1.33964	477.8323	1.34129	481.4824
11/32	1.33803	474.3094	1.33969	477.9461	1.34134	481.5967
3/8	1.33808	474.4229	1.33974	478.0600	1.34139	481.7110
13/32	1.33813	474.5363	1.33979	478.1739	1.34144	481.8254
7/16	1.33819	474.6498	1.33984	478.2878	1.34150	481.9397
15/32	1.33824	474.7632	1.33990	478.4017	1.34155	482.0540
1/2	1.33829	474.8767	1.33995	478.5156	1.34160	482.1684
17/32	1.33834	474.9902	1.34000	478.6296	1.34165	482.2828
9/16	1.33839	475.1038	1.34005	478.7435	1.34170	482.3972
19/32	1.33845	475.2173	1.34010	478.8575	1.34175	482.5116
5/8	1.33850	475.3308	1.34015	478.9715	1.34181	482.6260
21/32	1.33855	475.4444	1.34021	479.0855	1.34186	482.7404
11/16	1.33860	475.5580	1.34026	479.1995	1.34191	482.8548
23/32	1.33865	475.6716	1.34031	479.3135	1.34196	482.9693
3/4	1.33871	475.7852	1.34036	479.4275	1.34201	483.0838
25/32	1.33876	475.8988	1.34041	479.5416	1.34206	483.1982
13/16	1.33881	476.0124	1.34046	479.6556	1.34211	483.3127
27/32	1.33886	476.1260	1.34052	479.7697	1.34217	483.4273
7/8	1.33891	476.2397	1.34057	479.8838	1.34222	483.5418
29/32	1.33896	476.3534	1.34062	479.9979	1.34227	483.6563
15/16	1.33902	476.4670	1.34067	480.1120	1.34232	483.7709
31/32	1.33907	476.5807	1.34072	480.2261	1.34237	483.8854
1	1.33912	476.6944	1.34077	480.3403	1.34242	484.0000

22′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.34242	484.0000	1.34406	487.6736	1.34570	491.3611
1/32	1.34247	484.1146	1.34412	487.7886	1.34575	491.4766
1/16	1.34253	484.2292	1.34417	487.9037	1.34580	491.5920
3/32	1.34258	484.3438	1.34422	488.0187	1.34585	491.7075
1/8	1.34263	484.4584	1.34427	488.1338	1.34590	491.8230
5/32	1.34268	484.5731	1.34432	488.2489	1.34596	491.9385
3/16	1.34273	484.6877	1.34437	488.3640	1.34601	492.0541
7/32	1.34278	484.8024	1.34442	488.4791	1.34606	492.1696
1/4	1.34283	484.9171	1.34447	488.5942	1.34611	492.2852
9/32	1.34289	485.0318	1.34453	488.7093	1.34616	492.4007
5/16	1.34294	485.1465	1.34458	488.8245	1.34621	492.5163
11/32	1.34299	485.2612	1.34463	488.9396	1.34626	492.6319
3/8	1.34304	485.3760	1.34468	489.0548	1.34631	492.7475
13/32	1.34309	485.4907	1.34473	489.1700	1.34636	492.8631
7/16	1.34314	485.6055	1.34478	489.2852	1.34641	492.9788
15/32	1.34319	485.7203	1.34483	489.4004	1.34647	493.0944
1/2	1.34324	485.8351	1.34488	489.5156	1.34652	493.2101
17/32	1.34330	485.9499	1.34493	489.6309	1.34657	493.3257
9/16	1.34335	486.0647	1.34499	489.7461	1.34662	493.4414
19/32	1.34340	486.1795	1.34504	489.8614	1.34667	493.5571
5/8	1.34345	486.2944	1.34509	489.9767	1.34672	493.6729
21/32	1.34350	486.4092	1.34514	490.0920	1.34677	493.7886
11/16	1.34355	486.5241	1.34519	490.2073	1.34682	493.9043
23/32	1.34360	486.6390	1.34524	490.3226	1.34687	494.0201
3/4	1.34365	486.7539	1.34529	490.4379	1.34692	494.1359
25/32	1.34371	486.8688	1.34534	490.5533	1.34697	494.2516
13/16	1.34376	486.9838	1.34539	490.6686	1.34702	494.3674
27/32	1.34381	487.0987	1.34545	490.7840	1.34708	494.4832
7/8	1.34386	487.2136	1.34550	490.8994	1.34713	494.5991
29/32	1.34391	487.3286	1.34555	491.0148	1.34718	494.7149
15/16	1.34396	487.4436	1.34560	491.1302	1.34723	494.8308
31/32	1.34401	487.5586	1.34565	491.2457	1.34728	494.9466
1	1.34406	487.6736	1.34570	491.3611	1.34733	495.0625

22′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.34733	495.0625	1.34895	498.7778	1.35057	502.5069
1/32	1.34738	495.1784	1.34900	498.8941	1.35062	502.6237
1/16	1.34743	495.2943	1.34905	499.0104	1.35067	502.7405
3/32	1.34748	495.4102	1.34911	499.1268	1.35072	502.8573
1/8	1.34753	495.5262	1.34916	499.2432	1.35077	502.9741
5/32	1.34758	495.6421	1.34921	499.3595	1.35082	503.0909
3/16	1.34763	495.7581	1.34926	499.4759	1.35087	503.2077
7/32	1.34769	495.8740	1.34931	499.5923	1.35092	503.3246
1/4	1.34774	495.9900	1.34936	499.7088	1.35097	503.4414
9/32	1.34779	496.1060	1.34941	499.8252	1.35102	503.5583
5/16	1.34784	496.2220	1.34946	499.9417	1.35108	503.6752
11/32	1.34789	496.3381	1.34951	500.0581	1.35113	503.7921
3/8	1.34794	496.4541	1.34956	500.1746	1.35118	503.9090
13/32	1.34799	496.5702	1.34961	500.2911	1.35123	504.0259
7/16	1.34804	496.6862	1.34966	500.4076	1.35128	504.1428
15/32	1.34809	496.8023	1.34971	500.5241	1.35133	504.2598
1/2	1.34814	496.9184	1.34976	500.6406	1.35138	504.3767
17/32	1.34819	497.0345	1.34981	500.7572	1.35143	504.4937
9/16	1.34824	497.1506	1.34986	500.8737	1.35148	504.6107
19/32	1.34829	497.2668	1.34991	500.9903	1.35153	504.7277
5/8	1.34835	497.3829	1.34997	501.1069	1.35158	504.8447
21/32	1.34840	497.4991	1.35002	501.2235	1.35163	504.9618
11/16	1.34845	497.6153	1.35007	501.3401	1.35168	505.0788
23/32	1.34850	497.7315	1.35012	501.4567	1.35173	505.1959
3/4	1.34855	497.8477	1.35017	501.5734	1.35178	505.3129
25/32	1.34860	497.9639	1.35022	501.6900	1.35183	505.4300
13/16	1.34865	498.0801	1.35027	501.8067	1.35188	505.5471
27/32	1.34870	498.1963	1.35032	501.9233	1.35193	505.6642
7/8	1.34875	498.3126	1.35037	502.0400	1.35198	505.7814
29/32	1.34880	498.4289	1.35042	502.1567	1.35203	505.8985
15/16	1.34885	498.5452	1.35047	502.2735	1.35208	506.0157
31/32	1.34890	498.6615	1.35052	502.3902	1.35213	506.1328
1	1.34895	498.7778	1.35057	502.5069	1.35218	506.2500

22′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.35218	506.2500	1.35379	510.0069	1.35539	513.7778
1/32	1.35223	506.3672	1.35384	510.1246	1.35544	513.8958
1/16	1.35228	506.4844	1.35389	510.2422	1.35549	514.0139
3/32	1.35233	506.6016	1.35394	510.3599	1.35554	514.1320
1/8	1.35238	506.7189	1.35399	510.4775	1.35559	514.2501
5/32	1.35243	506.8361	1.35404	510.5952	1.35564	514.3682
3/16	1.35248	506.9534	1.35409	510.7129	1.35569	514.4864
7/32	1.35253	507.0706	1.35414	510.8306	1.35574	514.6045
1/4	1.35258	507.1879	1.35419	510.9484	1.35579	514.7227
9/32	1.35263	507.3052	1.35424	511.0661	1.35584	514.8408
5/16	1.35268	507.4226	1.35429	511.1838	1.35589	514.9590
11/32	1.35274	507.5399	1.35434	511.3016	1.35594	515.0772
3/8	1.35279	507.6572	1.35439	511.4194	1.35599	515.1954
13/32	1.35284	507.7746	1.35444	511.5372	1.35604	515.3136
7/16	1.35289	507.8920	1.35449	511.6550	1.35609	515.4319
15/32	1.35294	508.0093	1.35454	511.7728	1.35614	515.5501
1/2	1.35299	508.1267	1.35459	511.8906	1.35619	515.6684
17/32	1.35304	508.2441	1.35464	512.0085	1.35624	515.7867
9/16	1.35309	508.3616	1.35469	512.1263	1.35628	515.9050
19/32	1.35314	508.4790	1.35474	512.2442	1.35633	516.0233
5/8	1.35319	508.5965	1.35479	512.3621	1.35638	516.1416
21/32	1 35324	508.7139	1.35484	512.4800	1.35643	516.2599
11/16	1.35329	508.8314	1.35489	512.5979	1.35648	516.3783
23/32	1.35334	508.9489	1.35494	512.7158	1.35653	516.4966
3/4	1.35339	509.0664	1.35499	512.8338	1.35658	516.6150
25/32	1.35344	509.1839	1.35504	512.9517	1.35663	516.7334
13/16	1.35349	509.3015	1.35509	513.0697	1.35668	516.8518
27/32	1.35354	509.4190	1.35514	513.1877	1.35673	516.9702
7/8	1.35359	509.5366	1.35519	513.3057	1.35678	517.0887
29/32	1.35364	509.6541	1.35524	513.4237	1.35683	517.2071
15/16	1.35369	509.7717	1.35529	513.5417	1.35688	517.3255
31/32	1.35374	509.8893	1.35534	513.6597	1.35693	517.4440
1	1.35379	510.0069	1.35539	513.7778	1.35698	517.5625

22′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.35698	517.5625	1.35857	521.3611	1.36015	525.1736
1/32	1.35703	517.6810	1.35862	521.4800	1.36020	525.2930
1/16	1.35708	517.7995	1.35867	521.5990	1.36025	525.4124
3/32	1.35713	517.9180	1.35872	521.7179	1.36030	525.5317
⅛	1.35718	518.0366	1.35877	521.8369	1.36035	525.6512
5/32	1.35723	518.1551	1.35882	521.9559	1.36040	525.7706
3/16	1.35728	518.2737	1.35887	522.0749	1.36045	525.8900
7/32	1.35733	518.3923	1.35892	522.1939	1.36050	526.0094
¼	1.35738	518.5109	1.35897	522.3129	1.36055	526.1289
9/32	1.35743	518.6295	1.35901	522.4320	1.36060	526.2484
5/16	1.35748	518.7481	1.35906	522.5510	1.36064	526.3679
11/32	1.35753	518.8667	1.35911	522.6701	1.36069	526.4874
⅜	1.35758	518.9854	1.35916	522.7892	1.36074	526.6069
13/32	1.35763	519.1040	1.35921	522.9083	1.36079	526.7264
7/16	1.35768	519.2227	1.35926	523.0274	1.36084	526.8459
15/32	1.35773	519.3414	1.35931	523.1465	1.36089	526.9655
½	1.35778	519.4601	1.35936	523.2656	1.36094	527.0851
17/32	1.35783	519.5788	1.35941	523.3848	1.36099	527.2047
9/16	1.35788	519.6975	1.35946	523.5039	1.36104	527.3242
19/32	1.35792	519.8163	1.35951	523.6231	1.36109	527.4439
⅝	1.35797	519.9350	1.35956	523.7423	1.36114	527.5635
21/32	1.35802	520.0538	1.35961	523.8615	1.36119	527.6831
11/16	1.35807	520.1726	1.35966	523.9807	1.36124	527.8028
23/32	1.35812	520.2913	1.35971	524.0999	1.36129	527.9224
¾	1.35817	520.4102	1.35976	524.2192	1.36133	528.0421
25/32	1.35822	520.5290	1.35981	524.3384	1.36138	528.1618
13/16	1.35827	520.6478	1.35986	524.4577	1.36143	528.2815
27/32	1.35832	520.7667	1.35990	524.5770	1.36148	528.4012
⅞	1.35837	520.8855	1.35995	524.6963	1.36153	528.5209
29/32	1.35842	521.0044	1.36000	524.8156	1.36158	528.6407
15/16	1.35847	521.1233	1.36005	524.9349	1.36163	528.7604
31/32	1.35852	521.2422	1.36010	525.0543	1.36168	528.8802
1	1.35857	521.3611	1.36015	525.1736	1.36173	529.0000

23′

Fractions of an Inch.	0″ Log.	0″ Square.	1″ Log.	1″ Square.	2″ Log.	2″ Square.
0	1.36173	529.0000	1.36330	532.8403	1.36486	536.6944
1/32	1.36178	529.1198	1.36335	532.9605	1.36491	536.8151
1/16	1.36183	529.2396	1.36340	533.0808	1.36496	536.9358
3/32	1.36188	529.3594	1.36345	533.2010	1.36501	537.0565
1/8	1.36192	529.4793	1.36349	533.3213	1.36506	537.1772
5/32	1.36197	529.5991	1.36354	533.4416	1.36511	537.2979
3/16	1.36202	529.7190	1.36359	533.5619	1.36516	537.4186
7/32	1.36207	529.8389	1.36364	533.6822	1.36521	537.5394
1/4	1.36212	529.9588	1.36369	533.8025	1.36525	537.6602
9/32	1.36217	530.0787	1.36374	533.9229	1.36530	537.7809
5/16	1.36222	530.1986	1.36379	534.0432	1.36535	537.9017
11/32	1.36227	530.3185	1.36384	534.1636	1.36540	538.0225
3/8	1.36232	530.4385	1.36389	534.2840	1.36545	538.1433
13/32	1.36237	530.5584	1.36393	534.4044	1.36550	538.2642
7/16	1.36242	530.6784	1.36398	534.5248	1.36555	538.3850
15/32	1.36246	530.7984	1.36403	534.6452	1.36560	538.5059
1/2	1.36251	530.9184	1.36408	534.7656	1.36564	538.6267
17/32	1.36256	531.0384	1.36413	534.8861	1.36569	538.7476
9/16	1.36261	531.1584	1.36418	535.0065	1.36574	538.8685
19/32	1.36266	531.2785	1.36423	535.1270	1.36579	538.9894
5/8	1.36271	531.3985	1.36428	535.2475	1.36584	539.1104
21/32	1.36276	531.5186	1.36433	535.3680	1.36589	539.2313
11/16	1.36281	531.6387	1.36438	535.4885	1.36594	539.3522
23/32	1.36286	531.7588	1.36442	535.6091	1.36598	539.4732
3/4	1.36291	531.8789	1.36447	535.7296	1.36603	539.5942
25/32	1.36296	531.9990	1.36452	535.8502	1.36608	539.7152
13/16	1.36300	532.1192	1.36457	535.9707	1.36613	539.8362
27/32	1.36305	532.2393	1.36462	536.0913	1.36618	539.9572
7/8	1.36310	532.3595	1.36467	536.2119	1.36623	540.0782
29/32	1.36315	532.4797	1.36472	536.3325	1.36628	540.1993
15/16	1.36320	532.5999	1.36477	536.4532	1.36633	540.3203
31/32	1.36325	532.7201	1.36481	536.5738	1.36637	540.4414
1	1.36330	532.8403	1.36486	536.6944	1.36642	540.5625

23′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.36642	540.5625	1.36798	544.4444	1.36953	548.3403
1/32	1.36647	540.6836	1.36803	544.5660	1.36957	548.4622
1/16	1.36652	540.8047	1.36807	544.6875	1.36962	548.5842
3/32	1.36657	540.9258	1.36812	544.8091	1.36967	548.7062
1/8	1.36662	541.0470	1.36817	544.9307	1.36972	548.8282
5/32	1.36667	541.1681	1.36822	545.0523	1.36977	548.9503
3/16	1.36671	541.2893	1.36827	545.1739	1.36981	549.0723
7/32	1.36676	541.4105	1.36832	545.2955	1.36986	549.1943
1/4	1.36681	541.5317	1.36836	545.4171	1.36991	549.3164
9/32	1.36686	541.6529	1.36841	545.5387	1.36996	549.4385
5/16	1.36691	541.7741	1.36846	545.6604	1.37001	549.5606
11/32	1.36696	541.8954	1.36851	545.7821	1.37006	549.6827
3/8	1.36701	542.0166	1.36856	545.9038	1.37010	549.8048
13/32	1.36705	542.1379	1.36861	546.0255	1.37015	549.9269
7/16	1.36710	542.2591	1.36865	546.1472	1.37020	550.0491
15/32	1.36715	542.3804	1.36870	546.2689	1.37025	550.1712
1/2	1.36720	542.5017	1.36875	546.3906	1.37030	550.2934
17/32	1.36725	542.6231	1.36880	546.5124	1.37035	550.4156
9/16	1.36730	542.7444	1.36885	546.6341	1.37039	550.5378
19/32	1.36735	542.8657	1.36890	546.7559	1.37044	550.6600
5/8	1.36739	542.9871	1.36895	546.8777	1.37049	550.7822
21/32	1.36744	543.1085	1.36899	546.9995	1.37054	550.9045
11/16	1.36749	543.2298	1.36904	547.1213	1.37059	551.0267
23/32	1.36754	543.3512	1.36909	547.2432	1.37063	551.1490
3/4	1.36759	543.4727	1.36914	547.3650	1.37068	551.2713
25/32	1.36764	543.5941	1.36919	547.4869	1.37073	551.3936
13/16	1.36769	543.7155	1.36924	547.6088	1.37078	551.5159
27/32	1.36773	543.8370	1.36928	547.7306	1.37083	551.6382
7/8	1.36778	543.9584	1.36933	547.8525	1.37088	551.7605
29/32	1.36783	544.0799	1.36938	547.9745	1.37092	551.8829
15/16	1.36788	544.2014	1.36943	548.0964	1.37097	552.0052
31/32	1.36793	544.3229	1.36948	548.2183	1.37102	552.1276
1	1.36798	544.4444	1.36953	548.3403	1.37107	552.2500

23′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.37107	552.2500	1.37261	556.1736	1.37414	560.1111
1/32	1.37112	552.3724	1.37265	556.2964	1.37418	560.2344
1/16	1.37116	552.4948	1.37270	556.4193	1.37423	560.3577
3/32	1.37121	552.6172	1.37275	556.5422	1.37428	560.4810
1/8	1.37126	552.7397	1.37280	556.6650	1.37433	560.6043
5/32	1.37131	552.8621	1.37284	556.7879	1.37438	560.7276
3/16	1.37136	552.9846	1.37289	556.9108	1.37442	560.8509
7/32	1.37140	553.1071	1.37294	557.0338	1.37447	560.9743
1/4	1.37145	553.2296	1.37299	557.1567	1.37452	561.0977
9/32	1.37150	553.3521	1.37304	557.2796	1.37457	561.2210
5/16	1.37155	553.4746	1.37308	557.4026	1.37461	561.3444
11/32	1.37160	553.5972	1.37313	557.5256	1.37466	561.4678
3/8	1.37164	553.7197	1.37318	557.6485	1.37471	561.5913
13/32	1.37169	553.8423	1.37323	557.7715	1.37476	561.7147
7/16	1.37174	553.9649	1.37328	557.8946	1.37481	561.8381
15/32	1.37179	554.0875	1.37332	558.0176	1.37485	561.9616
1/2	1.37184	554.2101	1.37337	558.1406	1.37490	562.0851
17/32	1.37189	554.3327	1.37342	558.2637	1.37495	562.2086
9/16	1.37193	554.4553	1.37347	558.3867	1.37500	562.3321
19/32	1.37198	554.5780	1.37352	558.5098	1.37504	562.4556
5/8	1.37203	554.7006	1.37356	558.6329	1.37509	562.5791
21/32	1 37208	554.8233	1.37361	558.7560	1.37514	562.7026
11/16	1.37213	554.9460	1.37366	558.8792	1.37519	562.8262
23/32	1.37217	555.0687	1.37371	559.0023	1.37523	562.9498
3/4	1.37222	555.1914	1.37375	559.1254	1.37528	563.0734
25/32	1.37227	555.3141	1.37380	559.2486	1.37533	563.1969
13/16	1.37232	555.4369	1.37385	559.3718	1.37538	563.3206
27/32	1.37237	555.5596	1.37390	559.4950	1.37543	563.4442
7/8	1.37241	555.6824	1.37395	559.6182	1.37547	563.5678
29/32	1.37246	555.8052	1.37399	559.7414	1.37552	563.6915
15/16	1.37251	555.9280	1.37404	559.8646	1.37557	563.8151
31/32	1.37256	556.0508	1.37409	559.9879	1.37562	563.9388
1	1.37261	556.1736	1.37414	560.1111	1.37566	564.0625

23′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.37566	564.0625	1.37718	568.0278	1.37870	572.0069
1/32	1.37571	564.1862	1.37723	568.1519	1.37875	572.1315
1/16	1.37576	564.3099	1.37728	568.2761	1.37880	572.2561
3/32	1.37581	564.4337	1.37733	568.4002	1.37884	572.3807
1/8	1.37585	564.5574	1.37737	568.5244	1.37889	572.5053
5/32	1.37590	564.6812	1.37742	568.6486	1.37894	572.6299
3/16	1.37595	564.8049	1.37747	568.7728	1.37898	572.7546
7/32	1.37600	564.9287	1.37752	568.8970	1.37903	572.8792
1/4	1.37604	565.0525	1.37756	569.0213	1.37908	573.0039
9/32	1.37609	565.1763	1.37761	569.1455	1.37913	573.1286
5/16	1.37614	565.3002	1.37766	569.2698	1.37917	573.2533
11/32	1.37619	565.4240	1.37771	569.3940	1.37922	573.3780
3/8	1.37623	565.5479	1.37775	569.5183	1.37927	573.5027
13/32	1.37628	565.6717	1.37780	569.6426	1.37931	573.6274
7/16	1.37633	565.7956	1.37785	569.7670	1.37936	573.7522
15/32	1.37638	565.9195	1.37790	569.8913	1.37941	573.8770
1/2	1.37642	566.0434	1.37794	570.0156	1.37946	574.0017
17/32	1.37647	566.1673	1.37799	570.1400	1.37950	574.1265
9/16	1.37652	566.2913	1.37804	570.2644	1.37955	574.2513
19/32	1.37657	566.4152	1.37809	570.3887	1.37960	574.3761
5/8	1.37661	566.5392	1.37813	570.5131	1.37965	574.5010
21/32	1.37666	566.6631	1.37818	570.6375	1.37969	574.6258
11/16	1.37671	566.7871	1.37823	570.7620	1.37974	574.7507
23/32	1.37676	566.9111	1.37827	570.8864	1.37979	574.8755
3/4	1.37680	567.0352	1.37832	571.0109	1.37983	575.0004
25/32	1.37685	567.1592	1.37837	571.1353	1.37988	575.1253
13/16	1.37690	567.2832	1.37842	571.2598	1.37993	575.2502
27/32	1.37695	567.4073	1.37846	571.3843	1.37998	575.3752
7/8	1.37699	567.5314	1.37851	571.5088	1.38002	575.5001
29/32	1.37704	567.6554	1.37856	571.6333	1.38007	575.6251
15/16	1.37709	567.7795	1.37861	571.7578	1.38012	575.7500
31/32	1.37714	567.9037	1.37865	571.8824	1.38016	575.8750
1	1.37718	568.0278	1.37870	572.0069	1.38021	576.0000

24′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.38021	576.0000	1.38172	580.0069	1.38322	584.0278
1/32	1.38026	576.1250	1.38176	580.1324	1.38326	584.1537
1/16	1.38031	576.2500	1.38181	580.2578	1.38331	584.2795
3/32	1.38035	576.3751	1.38186	580.3833	1.38336	584.4054
1/8	1.38040	576.5001	1.38190	580.5088	1.38340	584.5314
5/32	1.38045	576.6252	1.38195	580.6343	1.38345	584.6573
3/16	1.38049	576.7502	1.38200	580.7598	1.38350	584.7832
7/32	1.38054	576.8753	1.38205	580.8853	1.38354	584.9092
1/4	1.38059	577.0004	1.38209	581.0109	1.38359	585.0352
9/32	1.38064	577.1255	1·38214	581.1364	1.38364	585.1611
5/16	1.38068	577.2507	1.38219	581.2620	1.38368	585.2871
11/32	1.38073	577.3758	1.38223	581.3875	1.38373	585.4131
3/8	1.38078	577.5010	1.38228	581.5131	1.38378	585.5392
13/32	1.38082	577.6261	1.38233	581.6387	1.38382	585.6652
7/16	1.38087	577.7513	1.38237	581.7644	1.38387	585.7913
15/32	1.38092	577.8765	1.38242	581.8900	1.38392	585.9173
1/2	1.38096	578.0017	1.38247	582.0156	1.38396	586.0434
17/32	1.38101	578.1270	1.38251	582.1413	1.38401	586.1695
9/16	1.38106	578.2522	1.38256	582.2670	1.38406	586.2956
19/32	1.38111	578.3774	1.38261	582.3926	1.38411	586.4217
5/8	1.38115	578.5027	1.38265	582.5183	1.38415	586.5479
21/32	1.38120	578.6280	1.38270	582.6440	1.38420	586.6740
11/16	1.38125	578.7533	1.38275	582.7698	1.38425	586.8002
23/32	1.38129	578.8786	1.38280	582.8955	1.38429	586.9263
3/4	1.38134	579.0039	1.38284	583.0213	1.38434	587.0525
25/32	1.38139	579.1292	1.38289	583.1470	1.38439	587.1787
13/16	1.38143	579.2546	1.38294	583.2728	1.38443	587.3049
27/32	1.38148	579.3799	1.38298	583.3986	1.38448	587.4312
7/8	1.38153	579.5053	1.38303	583.5244	1.38453	587.5574
29/32	1.38158	579.6307	1.38308	583.6502	1.38457	587.6837
15/16	1.38162	579.7561	1.38312	583.7761	1.38462	587.8099
31/32	1.38167	579.8815	1.38317	583.9019	1.38467	587.9362
1	1.38172	580.0069	1.38322	584.0278	1.38471	588.0625

24′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.38471	588.0625	1.38620	592.1111	1.38769	596.1736
1/32	1.38476	588.1888	1.38625	592.2379	1.38773	596.3008
1/16	1.38481	588.3151	1.38629	592.3646	1.38778	596.4280
3/32	1.38485	588.4415	1.38634	592.4914	1.38783	596.5552
⅛	1.38490	588.5678	1.38639	592.6182	1.38787	596.6824
5/32	1.38494	588.6942	1.38643	592.7450	1.38792	596.8096
3/16	1.38499	588.8206	1.38648	592.8718	1.38796	596.9369
7/32	1.38504	588.9469	1.38653	592.9986	1.38801	597.0641
¼	1.38508	589.0734	1.38657	593.1254	1.38806	597.1914
9/32	1.38513	589.1998	1.38662	593.2523	1.38810	597.3187
5/16	1.38518	589.3262	1.38667	593.3792	1.38815	597.4460
11/32	1.38522	589.4526	1.38671	593.5060	1.38820	597.5733
⅜	1.38527	589.5791	1.38676	593.6329	1.38824	597.7006
13/32	1.38532	589.7056	1.38681	593.7598	1.38829	597.8280
7/16	1.38536	589.8321	1.38685	593.8867	1.38833	597.9553
15/32	1.38541	589.9586	1.38690	594.0137	1.38838	598.0827
½	1.38546	590.0851	1.38694	594.1406	1.38843	598.2101
17/32	1.38550	590.2116	1.38699	594.2676	1.38847	598.3375
9/16	1.38555	590.3381	1.38704	594.3946	1.38852	598.4649
19/32	1.38560	590.4647	1.38708	594.5215	1.38857	598.5923
⅝	1.38564	590.5913	1.38713	594.6485	1.38861	598.7197
21/32	1.38569	590.7178	1.38718	594.7756	1.38866	598.8472
11/16	1.38574	590.8444	1.38722	594.9026	1.38870	598.9746
23/32	1.38578	590.9710	1.38727	595.0296	1.38875	599.1021
¾	1.38583	591.0977	1.38732	595.1567	1.38880	599.2296
25/32	1.38588	591.2243	1.38736	595.2838	1.38884	599.3571
13/16	1.38592	591.3509	1.38741	595.4108	1.38889	599.4846
27/32	1.38597	591.4776	1.38745	595.5379	1.38894	599.6121
⅞	1.38602	591.6043	1.38750	595.6650	1.38898	599.7397
29/32	1.38606	591.7310	1.38755	595.7922	1.38903	599.8672
15/16	1.38611	591.8577	1.38759	595.9193	1.38907	599.9948
31/32	1.38616	591.9844	1.38764	596.0464	1.38912	600.1224
1	1.38620	592.1111	1.38769	596.1736	1.38917	600.2500

24′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.38917	600.2500	1.39064	604.3403	1.39211	608.4444
1/32	1.38921	600.3776	1.39069	604.4683	1.39216	608.5729
1/16	1.38926	600.5052	1.39073	604.5964	1.39220	608.7014
3/32	1.38930	600.6329	1.39078	604.7245	1.39225	608.8299
1/8	1.38935	600.7605	1.39082	604.8525	1.39229	608.9584
5/32	1.38940	600.8882	1.39087	604.9806	1.39234	609.0870
3/16	1.38944	601.0159	1.39092	605.1088	1.39239	609.2155
7/32	1.38949	601.1436	1.39096	605.2369	1.39243	609.3441
1/4	1.38954	601.2713	1.39101	605.3650	1.39248	609.4727
9/32	1.38958	601.3990	1.39105	605.4932	1.39252	609.6012
5/16	1.38963	601.5267	1.39110	605.6213	1.39257	609.7298
11/32	1.38967	601.6545	1.39115	605.7495	1.39261	609.8585
3/8	1.38972	601.7822	1.39119	605.8777	1.39266	609.9871
13/32	1.38977	601.9100	1.39124	606.0059	1.39271	610.1157
7/16	1.38981	602.0378	1.39128	606.1341	1.39275	610.2444
15/32	1.38986	602.1656	1.39133	606.2624	1.39280	610.3731
1/2	1.38990	602.2934	1.39138	606.3906	1.39284	610.5017
17/32	1.38995	602.4212	1.39142	606.5189	1.39289	610.6304
9/16	1.39000	602.5491	1.39147	606.6472	1.39293	610.7591
19/32	1.39004	602.6769	1.39151	606.7755	1.39298	610.8879
5/8	1.39009	602.8048	1.39156	606.9038	1.39303	611.0166
21/32	1.39013	602.9327	1.39161	607.0321	1.39307	611.1454
11/16	1.39018	603.0606	1.39165	607.1604	1.39312	611.2741
23/32	1.39023	603.1885	1.39170	607.2887	1.39316	611.4029
3/4	1.39027	603.3164	1.39174	607.4171	1.39321	611.5317
25/32	1.39032	603.4443	1.39179	607.5455	1.39326	611.6605
13/16	1.39036	603.5723	1.39184	607.6739	1.39330	611.7893
27/32	1.39041	603.7003	1.39188	607.8023	1.39335	611.9181
7/8	1.39046	603.8282	1.39193	607.9307	1.39339	612.0470
29/32	1.39050	603.9562	1.39197	608.0591	1.39344	612.1758
15/16	1.39055	604.0842	1.39202	608.1875	1.39348	612.3047
31/32	1.39059	604.2122	1.39206	608.3160	1.39353	612.4336
1	1.39064	604.3403	1.39211	608.4444	1.39358	612.5625

24′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.39358	612.5625	1.39504	616.6944	1.39649	620.8403
1/32	1.39362	612.6914	1.39508	616.8238	1.39654	620.9701
1/16	1.39367	612.8203	1.39513	616.9532	1.39658	621.0999
3/32	1.39371	612.9493	1.39517	617.0825	1.39663	621.2297
1/8	1.39376	613.0782	1.39522	617.2119	1.39667	621.3595
5/32	1.39380	613.2072	1.39526	617.3413	1.39672	621.4893
3/16	1.39385	613.3362	1.39531	617.4707	1.39676	621.6192
7/32	1.39389	613.4652	1.39535	617.6002	1.39681	621.7490
1/4	1.39394	613.5942	1.39540	617.7296	1.39685	621.8789
9/32	1.39399	613.7232	1.39544	617.8591	1.39690	622.0088
5/16	1.39403	613.8522	1.39549	617.9885	1.39694	622.1387
11/32	1.39408	613.9813	1.39554	618.1180	1.39699	622.2686
3/8	1.39412	614.1104	1.39558	618.2475	1.39703	622.3985
13/32	1.39417	614.2394	1.39563	618.3770	1.39708	622.5285
7/16	1.39421	614.3685	1.39567	618.5065	1.39712	622.6584
15/32	1.39426	614.4976	1.39572	618.6361	1.39717	622.7884
1/2	1.39431	614.6267	1.39576	618.7656	1.39722	622.9184
17/32	1.39435	614.7559	1.39581	618.8952	1.39726	623.0484
9/16	1.39440	614.8850	1.39585	619.0248	1.39731	623.1784
19/32	1.39444	615.0142	1.39590	619.1544	1.39735	623.3084
5/8	1.39449	615.1433	1.39594	619.2840	1.39740	623.4385
21/32	1.39453	615.2725	1.39599	619.4136	1.39744	623.5685
11/16	1.39458	615.4017	1.39604	619.5432	1.39749	623.6986
23/32	1.39462	615.5309	1.39608	619.6729	1.39753	623.8287
3/4	1.39467	615.6602	1.39613	619.8025	1.39758	623.9588
25/32	1.39472	615.7894	1.39617	619.9322	1.39762	624.0889
13/16	1.39476	615.9186	1.39622	620.0619	1.39767	624.2190
27/32	1.29481	616.0479	1.39626	620.1916	1.39771	624.3491
7/8	1.39485	616.1772	1.39631	620.3213	1.39776	624.4793
29/32	1.39490	616.3065	1.39635	620.4510	1.39780	624.6094
15/16	1.39494	616.4358	1.39640	620.5808	1.39785	624.7396
31/32	1.39499	616.5651	1.39644	620.7105	1.39789	624.8698
1	1.39504	616.6944	1.39649	620.8403	1.39794	625.0000

25′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.39794	625.0000	1.39939	629.1736	1.40083	633.3611
1/32	1.39799	625.1302	1.39943	629.3043	1.40087	633.4922
1/16	1.39803	625.2604	1.39948	629.4349	1.40092	633.6233
3/32	1.39808	625.3907	1.39952	629.5656	1.40096	633.7544
1/8	1.39812	625.5209	1.39957	629.6963	1.40101	633.8855
5/32	1.39817	625.6512	1.39961	629.8270	1.40105	634.0167
3/16	1.39821	625.7815	1.39966	629.9577	1.40110	634.1478
7/32	1.39826	625.9118	1.39970	630.0884	1.40114	634.2790
1/4	1.39830	626.0421	1.39975	630.2192	1.40119	634.4102
9/32	1.39835	626.1724	1.39979	630.3499	1.40123	634.5413
5/16	1.39839	626.3028	1.39984	630.4807	1.40127	634.6726
11/32	1.39844	626.4331	1.39988	630.6115	1.40132	634.8038
3/8	1.39848	626.5635	1.39993	630.7423	1.40136	634.9350
13/32	1.39853	626.6939	1.39997	630.8731	1.40141	635.0663
7/16	1.39857	626.8242	1.40002	631.0039	1.40145	635.1975
15/32	1.39862	626.9547	1.40006	631.1348	1.40150	635.3288
1/2	1.39866	627.0851	1.40011	631.2656	1.40154	635.4601
17/32	1.39871	627.2155	1.40015	631.3965	1.40159	635.5914
9/16	1.39875	627.3459	1.40020	631.5274	1.40163	635.7227
19/32	1.39880	627.4764	1.40024	631.6583	1.40168	635.8540
5/8	1.39884	627.6069	1.40029	631.7892	1.40172	635.9854
21/32	1.39889	627.7374	1.40033	631.9201	1.40177	636.1167
11/16	1.39893	627.8679	1.40038	632.0510	1.40181	636.2481
23/32	1.39898	627.9984	1.40042	632.1820	1.40186	636.3795
3/4	1.39902	628.1289	1.40047	632.3129	1.40190	636.5109
25/32	1.39907	628.2594	1.40051	632.4439	1.40195	636.6423
13/16	1.39911	628.3900	1.40056	632.5749	1.40199	636.7737
27/32	1.39916	628.5206	1.40060	632.7059	1.40204	636.9051
7/8	1.39920	628.6512	1.40065	632.8369	1.40208	637.0366
29/32	1.39925	628.7817	1.40069	632.9679	1.40213	637.1680
15/16	1.39930	628.9124	1.40074	633.0990	1.40217	637.2995
31/32	1.39934	629.0430	1.40078	633.2300	1.40222	637.4310
1	1.39939	629.1736	1.40083	633.3611	1.40226	637.5625

25′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.40226	637.5625	1.40369	641.7778	1.40512	646.0069
1/32	1.40231	637.6940	1.40374	641.9097	1.40516	646.1393
1/16	1.40235	637.8255	1.40378	642.0417	1.40521	646.2717
3/32	1.40240	637.9571	1.40383	642.1737	1.40525	646.4041
1/8	1.40244	638.0887	1.40387	642.3057	1.40530	646.5366
5/32	1.40249	638.2202	1.40392	642.4377	1.40534	646.6690
3/16	1.40253	638.3518	1.40396	642.5697	1.40539	646.8015
7/32	1.40257	638.4834	1.40400	642.7017	1.40543	646.9339
1/4	1.40262	638.6150	1.40405	642.8338	1.40547	647.0664
9/32	1.40266	638.7466	1.40409	642.9658	1.40552	647.1989
5/16	1.40271	638.8783	1.40414	643.0979	1.40556	647.3314
11/32	1.40275	639.0099	1.40418	643.2300	1.40561	647.4639
3/8	1.40280	639.1416	1.40423	643.3621	1.40565	647.5965
13/32	1.40284	639.2733	1.40427	643.4942	1.40570	647.7290
7/16	1.40289	639.4050	1.40432	643.6263	1.40574	647.8616
15/32	1.40293	639.5367	1.40436	643.7585	1.40579	647.9941
1/2	1.40298	639.6684	1.40441	643.8906	1.40583	648.1267
17/32	1.40302	639.8001	1.40445	644.0228	1.40587	648.2593
9/16	1.40307	639.9319	1.40450	644.1550	1.40592	648.3920
19/32	1.40311	640.0636	1.40454	644.2872	1.40596	648.5246
5/8	1.40316	640.1954	1.40458	644.4194	1.40601	648.6572
21/32	1.40320	640.3272	1.40463	644.5516	1.40605	648.7899
11/16	1.40325	640.4590	1.40467	644.6838	1.40610	648.9226
23/32	1.40329	640.5908	1.40472	644.8161	1.40614	649.0552
3/4	1.40334	640.7227	1.40476	644.9484	1.40619	649.1879
25/32	1.40338	640.8545	1.40481	645.0806	1.40623	649.3206
13/16	1.40342	640.9864	1.40485	645.2129	1.40627	649.4534
27/32	1.40347	641.1182	1.40490	645.3452	1.40632	649.5861
7/8	1.40351	641.2501	1.40494	645.4775	1.40636	649.7189
29/32	1.40356	641.3820	1.40499	645.6099	1.40641	649.8516
15/16	1.40360	641.5139	1.40503	645.7422	1.40645	649.9844
31/32	1.40365	641.6458	1.40507	645.8746	1.40650	650.1172
1	1.40369	641.7778	1.40512	646.0069	1.40654	650.2500

25′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.40654	650.2500	1.40796	654.5069	1.40937	658.7778
1/32	1.40658	650.3828	1.40800	654.6402	1.40941	658.9115
1/16	1.40663	650.5157	1.40805	654.7735	1.40946	659.0452
3/32	1.40667	650.6485	1.40809	654.9067	1.40950	659.1789
1/8	1.40672	650.7814	1.40813	655.0400	1.40955	659.3126
5/32	1.40676	650.9142	1.40818	655.1733	1.40959	659.4464
3/16	1.40681	651.0471	1.40822	655.3067	1.40963	659.5801
7/32	1.40685	651.1800	1.40827	655.4400	1.40968	659.7139
1/4	1.40689	651.3129	1.40831	655.5734	1.40972	659.8477
9/32	1.40694	651.4459	1.40835	655.7067	1.40977	659.9815
5/16	1.40698	651.5788	1.40840	655.8401	1.40981	660.1153
11/32	1.40703	651.7118	1.40844	655.9735	1.40985	660.2491
3/8	1.40707	651.8447	1.40849	656.1069	1.40990	660.3829
13/32	1.40712	651.9777	1.40853	656.2403	1.40994	660.5168
7/16	1.40716	652.1107	1.40858	656.3737	1.40999	660.6506
15/32	1.40720	652.2437	1.40862	656.5072	1.41003	660.7845
1/2	1.40725	652.3767	1.40866	656.6406	1.41007	660.9184
17/32	1.40729	652.5098	1.40871	656.7741	1.41012	661.0523
9/16	1.40734	652.6428	1.40875	656.9076	1.41016	661.1862
19/32	1.40738	652.7759	1.40880	657.0411	1.41021	661.3202
5/8	1.40743	652.9090	1.40884	657.1746	1.41025	661.4541
21/32	1.40747	653.0421	1.40888	657.3081	1.41029	661.5881
11/16	1.40751	653.1752	1.40893	657.4417	1.41034	661.7220
23/32	1.40756	653.3083	1.40897	657.5752	1.41038	661.8560
3/4	1.40760	653.4414	1.40902	657.7088	1.41043	661.9900
25/32	1.40765	653.5746	1.40906	657.8423	1.41047	662.1240
13/16	1.40769	653.7077	1.40911	657.9759	1.41051	662.2581
27/32	1.40774	653.8409	1.40915	658.1095	1.41056	662.3921
7/8	1.40778	653.9741	1.40919	658.2432	1.41060	662.5262
29/32	1.40782	654.1073	1.40924	658.3768	1.41065	662.6602
15/16	1.40787	654.2405	1.40928	658.5104	1.41069	662.7943
31/32	1.40791	654.3737	1.40933	658.6441	1.41073	662.9284
1	1.40796	654.5069	1.40937	658.7778	1.41078	663.0625

25′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.41078	663.0625	1.41218	667.3611	1.41358	671.6736
1/32	1.41082	663.1966	1.41222	667.4957	1.41362	671.8086
1/16	1.41087	663.3308	1.41227	667.6302	1.41367	671.9436
3/32	1.41091	663.4649	1.41231	667.7648	1.41371	672.0786
1/8	1.41095	663.5991	1.41236	667.8994	1.41375	672.2137
5/32	1.41100	663.7332	1.41240	668.0340	1.41380	672.3487
3/16	1.41104	663.8674	1.41244	668.1686	1.41384	672.4838
7/32	1.41108	664.0016	1.41249	668.3033	1.41388	672.6188
1/4	1.41113	664.1359	1.41253	668.4379	1.41393	672.7539
9/32	1.41117	664.2701	1.41257	668.5726	1.41397	672.8890
5/16	1.41122	664.4043	1.41262	668.7073	1.41402	673.0241
11/32	1.41126	664.5386	1.41266	668.8420	1.41406	673.1592
3/8	1.41130	664.6729	1.41271	668.9767	1.41410	673.2944
13/32	1.41135	664.8071	1.41275	669.1114	1.41415	673.4295
7/16	1.41139	664.9414	1.41279	669.2461	1.41419	673.5647
15/32	1.41144	665.0757	1.41284	669.3809	1.41423	673.6999
1/2	1.41148	665.2101	1.41288	669.5156	1.41428	673.8351
17/32	1.41152	665.3444	1.41292	669.6504	1.41432	673.9703
9/16	1.41157	665.4788	1.41297	669.7852	1.41436	674.1055
19/32	1.41161	665.6131	1.41301	669.9200	1.41441	674.2407
5/8	1.41165	665.7475	1.41306	670.0548	1.41445	674.3760
21/32	1.41170	665.8819	1.41310	670.1896	1.41449	674.5112
11/16	1.41174	666.0163	1.41314	670.3245	1.41454	674.6465
23/32	1.41179	666.1507	1.41319	670.4593	1.41458	674.7818
3/4	1.41183	666.2852	1.41323	670.5942	1.41463	674.9171
25/32	1.41187	666.4196	1.41327	670.7291	1.41467	675.0524
13/16	1.41192	666.5541	1.41332	670.8640	1.41471	675.1877
27/32	1.41196	666.6885	1.41336	670.9989	1.41476	675.3231
7/8	1.41201	666.8230	1.41340	671.1338	1.41480	675.4584
29/32	1.41205	666.9575	1.41345	671.2687	1.41484	675.5938
15/16	1.41209	667.0920	1.41349	671.4037	1.41489	675.7292
31/32	1.41214	667.2266	1.41354	671.5386	1.41493	675.8646
1	1.41218	667.3611	1.41358	671.6736	1.41497	676.0000

26′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.41497	676.0000	1.41636	680.3403	1.41775	684.6944
1/32	1.41502	676.1354	1.41641	680.4761	1.41779	684.8307
1/16	1.41506	676.2709	1.41645	680.6120	1.41783	684.9670
3/32	1.41510	676.4063	1.41649	680.7479	1.41788	685.1034
1/8	1.41515	676.5418	1.41654	680.8838	1.41792	685.2397
5/32	1.41519	676.6773	1.41658	681.0197	1.41796	685.3760
3/16	1.41523	676.8127	1.41662	681.1556	1.41801	685.5124
7/32	1.41528	676.9482	1.41667	681.2916	1.41805	685.6488
1/4	1.41532	677.0838	1.41671	681.4275	1.41809	685.7852
9/32	1.41536	677.2193	1.41675	681.5635	1.41814	685.9216
5/16	1.41541	677.3548	1.41680	681.6995	1.41818	686.0580
11/32	1.41545	677.4904	1.41684	681.8355	1.41822	686.1944
3/8	1.41550	677.6260	1.41688	681.9715	1.41827	686.3308
13/32	1.41554	677.7616	1.41693	682.1075	1.41831	686.4673
7/16	1.41558	677.8972	1.41697	682.2435	1.41835	686.6038
15/32	1.41563	678.0328	1.41701	682.3796	1.41840	686.7402
1/2	1.41567	678.1684	1.41706	682.5156	1.41844	686.8767
17/32	1.41571	678.3040	1.41710	682.6517	1.41848	687.0132
9/16	1.41576	678.4397	1.41714	682.7878	1.41853	687.1498
19/32	1.41580	678.5754	1.41719	682.9239	1.41857	687.2863
5/8	1.41584	678.7110	1.41723	683.0600	1.41861	687.4229
21/32	1.41589	678.8467	1.41727	683.1961	1.41866	687.5594
11/16	1.41593	678.9824	1.41732	683.3323	1.41870	687.6960
23/32	1.41597	679.1182	1.41736	683.4684	1.41874	687.8326
3/4	1.41602	679.2539	1.41740	683.6046	1.41878	687.9692
25/32	1.41606	679.3897	1.41745	683.7408	1.41883	688.1058
13/16	1.41610	679.5254	1.41749	683.8770	1.41887	688.2424
27/32	1.41615	679.6612	1.41753	684.0132	1.41891	688.3791
7/8	1.41619	679.7970	1.41758	684.1494	1.41896	688.5157
29/32	1.41623	679.9328	1.41762	684.2857	1.41900	688.6524
15/16	1.41628	680.0686	1.41766	684.4219	1.41904	688.7891
31/32	1.41632	680.2044	1.41771	684.5582	1.41909	688.9258
1	1.41636	680.3403	1.41775	684.6944	1.41913	689.0625

26′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.41913	689.0625	1.42051	693.4444	1.42188	697.8403
1/32	1.41917	689.1992	1.42055	693.5816	1.42192	697.9779
1/16	1.41922	689.3360	1.42059	693.7188	1.42196	698.1155
3/32	1.41926	689.4727	1.42063	693.8560	1.42201	698.2531
1/8	1.41930	689.6095	1.42068	693.9932	1.42205	698.3907
5/32	1.41934	689.7463	1.42072	694.1304	1.42209	698.5284
3/16	1.41939	689.8831	1.42076	694.2676	1.42213	698.6660
7/32	1.41943	690.0199	1.42081	694.4048	1.42218	698.8037
1/4	1.41947	690.1567	1.42085	694.5421	1.42222	698.9414
9/32	1.41952	690.2935	1.42089	694.6794	1.42226	699.0791
5/16	1.41956	690.4304	1.42094	694.8167	1.42231	699.2168
11/32	1.41960	690.5672	1.42098	694.9539	1.42235	699.3546
3/8	1.41965	690.7041	1.42102	695.0913	1.42239	699.4923
13/32	1.41969	690.8410	1.42106	695.2286	1.42243	699.6301
7/16	1.41973	690.9779	1.42111	695.3659	1.42248	699.7678
15/32	1.41978	691.1148	1.42115	695.5033	1.42252	699.9056
1/2	1.41982	691.2517	1.42119	695.6406	1.42256	700.0434
17/32	1.41986	691.3887	1.42124	695.7780	1.42261	700.1812
9/16	1.41990	691.5256	1.42128	695.9154	1.42265	700.3190
19/32	1.41995	691.6626	1.42132	696.0528	1.42269	700.4569
5/8	1.41999	691.7996	1.42136	696.1902	1.42273	700.5947
21/32	1.42003	691.9366	1.42141	696.3276	1.42278	700.7326
11/16	1.42008	692.0736	1.42145	696.4651	1.42282	700.8705
23/32	1.42012	692.2106	1.42149	696.6025	1.42286	701.0084
3/4	1.42016	692.3477	1.42154	696.7400	1.42290	701.1463
25/32	1.42021	692.4847	1.42158	696.8775	1.42295	701.2842
13/16	1.42025	692.6218	1.42162	697.0150	1.42299	701.4221
27/32	1.42029	692.7589	1.42166	697.1525	1.42303	701.5601
7/8	1.42033	692.8959	1.42171	697.2900	1.42308	701.6980
29/32	1.42038	693.0330	1.42175	697.4276	1.42312	701.8360
15/16	1.42042	693.1702	1.42179	697.5651	1.42316	701.9740
31/32	1.42046	693.3073	1.42184	697.7027	1.42320	702.1120
1	1.42051	693.4444	1.42188	697.8403	1.42325	702.2500

26′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.42325	702.2500	1.42461	706.6736	1.42597	711.1111
1/32	1.42329	702.3880	1.42465	706.8121	1.42601	711.2500
1/16	1.42333	702.5261	1.42469	706.9505	1.42605	711.3889
3/32	1.42337	702.6641	1.42474	707.0890	1.42610	711.5278
⅛	1.42342	702.8022	1.42478	707.2275	1.42614	711.6668
5/32	1.42346	702.9403	1.42482	707.3661	1.42618	711.8057
3/16	1.42350	703.0784	1.42486	707.5046	1.42622	711.9447
7/32	1.42354	703.2165	1.42491	707.6431	1.42627	712.0837
¼	1.42359	703.3546	1.42495	707.7817	1.42631	712.2227
9/32	1.42363	703.4927	1.42499	707.9203	1.42635	712.3617
5/16	1.42367	703.6309	1.42503	708.0588	1.42639	712.5007
11/32	1.42372	703.7690	1.42508	708.1974	1.42644	712.6397
⅜	1.42376	703.9072	1.42512	708.3360	1.42648	712.7788
13/32	1.42380	704.0454	1.42516	708.4747	1.42652	712.9178
7/16	1.42384	704.1836	1.42520	708.6133	1.42656	713.0569
15/32	1.42389	704.3218	1.42525	708.7520	1.42660	713.1960
½	1.42393	704.4601	1.42529	708.8906	1.42665	713.3351
17/32	1.42397	704.5983	1.42533	709.0293	1.42669	713.4742
9/16	1.42401	704.7366	1.42537	709.1680	1.42673	713.6133
19/32	1.42406	704.8748	1.42542	709.3067	1.42677	713.7524
⅝	1.42410	705.0131	1.42546	709.4454	1.42682	713.8916
21/32	1.42414	705.1514	1.42550	709.5842	1.42686	714.0308
11/16	1.42418	705.2897	1.42554	709.7229	1.42690	714.1699
23/32	1.42423	705.4281	1.42559	709.8617	1.42694	714.3091
¾	1.42427	705.5664	1.42563	710.0004	1.42699	714.4484
25/32	1.42431	705.7048	1.42567	710.1392	1.42703	714.5876
13/16	1.42435	705.8431	1.42571	710.2780	1.42707	714.7268
27/32	1.42440	705.9815	1.42576	710.4168	1.42711	714.8661
⅞	1.42444	706.1199	1.42580	710.5557	1.42715	715.0053
29/32	1.42448	706.2583	1.42584	710.6945	1.42720	715.1446
15/16	1.42452	706.3967	1.42588	710.8334	1.42724	715.2839
31/32	1.42457	706.5352	1.42593	710.9722	1.42728	715.4232
1	1.42461	706.6736	1.42597	711.1111	1.42732	715.5625

26′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.42732	715.5625	1.42867	720.0278	1.43002	724.5069
1/32	1.42737	715.7018	1.42872	720.1675	1.43006	724.6471
1/16	1.42741	715.8412	1.42876	720.3073	1.43011	724.7874
3/32	1.42745	715.9805	1.42880	720.4471	1.43015	724.9276
1/8	1.42749	716.1199	1.42884	720.5869	1.43019	725.0678
5/32	1.42754	716.2593	1.42889	720.7267	1.43023	725.2081
3/16	1.42758	716.3987	1.42893	720.8666	1.43027	725.3483
7/32	1.42762	716.5381	1.42897	721.0064	1.43032	725.4886
1/4	1.42766	716.6775	1.42901	721.1463	1.43036	725.6289
9/32	1.42770	716.8170	1.42905	721.2861	1.43040	725.7692
5/16	1.42775	716.9564	1.42910	721.4260	1.43044	725.9095
11/32	1.42779	717.0959	1.42914	721.5659	1.43048	726.0499
3/8	1.42783	717.2354	1.42918	721.7058	1.43053	726.1902
13/32	1.42787	717.3748	1.42922	721.8458	1.43057	726.3306
7/16	1.42792	717.5144	1.42926	721.9857	1.43061	726.4709
15/32	1.42796	717.6539	1.42931	722.1257	1.43065	726.6113
1/2	1.42800	717.7934	1.42935	722.2656	1.43069	726.7517
17/32	1.42804	717.9329	1.42939	722.4056	1.43074	726.8922
9/16	1.42808	718.0725	1.42943	722.5456	1.43078	727.0326
19/32	1.42813	718.2121	1.42947	722.6856	1.43082	727.1730
5/8	1.42817	718.3517	1.42952	722.8256	1.43086	727.3135
21/32	1.42821	718.4913	1.42956	722.9657	1.43090	727.4539
11/16	1.42825	718.6309	1.42960	723.1057	1.43094	727.5944
23/32	1.42830	718.7705	1.42964	723.2458	1.43099	727.7349
3/4	1.42834	718.9102	1.42969	723.3859	1.43103	727.8754
25/32	1.42838	719.0498	1.42973	723.5259	1.43107	728.0160
13/16	1.42842	719.1895	1.42977	723.6660	1.43111	728.1565
27/32	1.42846	719.3292	1.42981	723.8062	1.43115	728.2970
7/8	1.42851	719.4689	1.42985	723.9463	1.43120	728.4376
29/32	1.42855	719.6086	1.42990	724.0864	1.43124	728.5782
15/16	1.42859	719.7483	1.42994	724.2266	1.43128	728.7188
31/32	1.42863	719.8880	1.42998	724.3668	1.43132	728.8594
1	1.42867	720.0278	1.43002	724.5069	1.43136	729.0000

27′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.43136	729.0000	1.43270	733.5069	1.43404	738.0278
1/32	1.43141	729.1406	1.43274	733.6480	1.43408	738.1693
1/16	1.43145	729.2813	1.43279	733.7891	1.43412	738.3108
3/32	1.43149	729.4219	1.43283	733.9302	1.43416	738.4523
⅛	1.43153	729.5626	1.43287	734.0713	1.43420	738.5939
5/32	1.43157	729.7033	1.43291	734.2124	1.43424	738.7354
3/16	1.43162	729.8440	1.43295	734.3535	1.43429	738.8770
7/32	1.43166	729.9847	1.43299	734.4947	1.43433	739.0186
¼	1.43170	730.1254	1.43304	734.6359	1.43437	739.1602
9/32	1.43174	730.2662	1.43308	734.7770	1.43441	739.3018
5/16	1.43178	730.4069	1.43312	734.9182	1.43445	739.4434
11/32	1.43182	730.5477	1.43316	735.0594	1.43449	739.5850
⅜	1.43187	730.6885	1.43320	735.2006	1·43454	739.7267
13/32	1.43191	730.8293	1.43324	735.3419	1.43458	739.8683
7/16	1.43195	730.9701	1.43329	735.4831	1.43462	740.0100
15/32	1.43199	731.1109	1.43333	735.6244	1.43466	740.1517
½	1.43203	731.2517	1.43337	735.7656	1.43470	740.2934
17/32	1.43208	731.3926	1.43341	735.9069	1.43474	740.4351
9/16	1.43212	731.5334	1.43345	736.0482	1.43479	740.5769
19/32	1.43216	731.6743	1.43349	736.1895	1.43483	740.7186
⅝	1.43220	731.8152	1.43354	736.3308	1.43487	740.8604
21/32	1.43224	731.9561	1.43358	736.4722	1.43491	741.0021
11/16	1.43228	732.0970	1.43362	736.6135	1.43495	741.1439
23/32	1.43233	732.2380	1.43366	736.7549	1.43499	741.2857
¾	1.43237	732.3789	1.43370	736.8963	1.43503	741.4275
25/32	1.43241	732.5199	1.43374	737.0377	1.43508	741.5693
13/16	1.43245	732.6608	1.43379	737.1791	1.43512	741.7112
27/32	1.43249	732.8018	1.43383	737.3205	1.43516	741.8530
⅞	1.43254	732.9428	1.43387	737.4619	1.43520	741.9949
29/32	1.43258	733.0838	1.43391	737.6034	1.43524	742.1368
15/16	1.43262	733.2249	1.43395	737.7448	1.43528	742.2787
31/32	1.43266	733.3659	1.43399	737.8863	1.43533	742.4206
1	1.43270	733.5069	1.43404	738.0278	1.43537	742.5625

27′

Fractions of an inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.43537	742.5625	1.43669	747.1111	1.43801	751.6736
1/32	1.43541	742.7044	1.43673	747.2535	1.43806	751.8164
1/16	1.43545	742.8464	1.43678	747.3959	1.43810	751.9592
3/32	1.43549	742.9883	1.43682	747.5383	1.43814	752.1021
1/8	1.43553	743.1303	1.43686	747.6807	1.43818	752.2449
5/32	1.43557	743.2723	1.43690	747.8231	1.43822	752.3878
3/16	1.43562	743.4143	1.43694	747.9655	1.43826	752.5306
7/32	1.43566	743.5563	1.43698	748.1080	1.43830	752.6735
1/4	1.43570	743.6984	1.43702	748.2504	1.43834	752.8164
9/32	1.43574	743.8404	1.43706	748.3929	1.43839	752.9593
5/16	1.43578	743.9824	1.43711	748.5354	1.43843	753.1022
11/32	1.43582	744.1245	1.43715	748.6779	1.43847	753.2452
3/8	1.43586	744.2666	1.43719	748.8204	1.43851	753.3881
13/32	1.43591	744.4087	1.43723	748.9630	1.43855	753.5311
7/16	1.43595	744.5508	1.43727	749.1055	1.43859	753.6741
15/32	1.43599	744.6929	1.43731	749.2481	1.43863	753.8171
1/2	1.43603	744.8351	1.43735	749.3906	1.43867	753.9601
17/32	1.43607	744.9772	1.43740	749.5332	1.43872	754.1031
9/16	1.43611	745.1194	1.43744	749.6758	1.43876	754.2461
19/32	1.43615	745.2616	1.43748	749.8184	1.43880	754.3892
5/8	1.43620	745.4038	1.43752	749.9610	1.43884	754.5322
21/32	1.43624	745.5460	1.43756	750.1037	1.43888	754.6753
11/16	1.43628	745.6882	1.43760	750.2463	1.43892	754.8184
23/32	1.43632	745.8304	1.43764	750.3890	1.43896	754.9615
3/4	1.43636	745.9727	1.43768	750.5317	1.43900	755.1046
25/32	1.43640	746.1149	1.43773	750.6744	1.43904	755.2477
13/16	1.43644	746.2572	1.43777	750.8171	1.43909	755.3909
27/32	1.43649	746.3995	1.43781	750.9598	1.43913	755.5340
7/8	1.43653	746.5418	1.43785	751.1025	1.43917	755.6772
29/32	1.43657	746.6841	1.43789	751.2453	1.43921	755.8204
15/16	1.43661	746.8264	1.43793	751.3880	1.43925	755.9636
31/32	1.43665	746.9688	1.43797	751.5308	1.43929	756.1068
1	1.43669	747.1111	1.43801	751.6736	1.43933	756.2500

27′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.43933	756.2500	1.44065	760.8403	1.44196	765.4444
1/32	1.43937	756.3932	1.44069	760.9839	1.44200	765.5885
1/16	1.43941	756.5365	1.44073	761.1276	1.44204	765.7327
3/32	1.43946	756.6797	1.44077	761.2713	1.44208	765.8768
⅛	1.43950	756.8230	1.44081	761.4150	1.44212	766.0209
5/32	1.43954	756.9663	1.44085	761.5588	1.44216	766.1651
3/16	1.43958	757.1096	1.44089	761.7025	1.44220	766.3093
7/32	1.43962	757.2529	1.44093	761.8463	1.44224	766.4535
¼	1.43966	757.3963	1.44097	761.9900	1.44228	766.5977
9/32	1.43970	757.5396	1.44102	762.1338	1.44232	766.7419
5/16	1.43974	757.6830	1.44106	762.2776	1.44237	766.8861
11/32	1.43978	757.8263	1.44110	762.4214	1.44241	767.0303
⅜	1.43983	757.9697	1.44114	762.5652	1.44245	767.1746
13/32	1.43987	758.1131	1.44118	762.7090	1.44249	767.3189
7/16	1.43991	758.2565	1.44122	762.8529	1.44253	767.4631
15/32	1.43995	758.4000	1.44126	762.9968	1.44257	767.6074
½	1.43999	758.5434	1.44130	763.1406	1.44261	767.7517
17/32	1.44003	758.6869	1.44134	763.2845	1.44265	767.8961
9/16	1.44007	758.8303	1.44138	763.4284	1.44269	768.0404
19/32	1.44011	758.9738	1.44143	763.5723	1.44273	768.1847
⅝	1.44015	759.1173	1.44147	763.7163	1.44277	768.3291
21/32	1.44020	759.2608	1.44151	763.8602	1.44281	768.4735
11/16	1.44024	759.4043	1.44155	764.0042	1.44286	768.6179
23/32	1.44028	759.5479	1.44159	764.1481	1.44290	768.7623
¾	1.44032	759.6914	1.44163	764.2921	1.44294	768.9067
25/32	1.44036	759.8350	1.44167	764.4361	1.44298	769.0511
13/16	1.44040	759.9785	1.44171	764.5801	1.44302	769.1956
27/32	1.44044	760.1221	1.44175	764.7241	1.44306	769.3400
⅞	1.44048	760.2657	1.44179	764.8682	1.44310	769.4845
29/32	1.44052	760.4093	1.44183	765.0122	1.44314	769.6290
15/16	1.44056	760.5530	1.44188	765.1563	1.44318	769.7735
31/32	1.44061	760.6966	1.44192	765.3004	1.44322	769.9180
1	1.44065	760.8403	1.44196	765.4444	1.44326	770.0625

27′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.44326	770.0625	1.44457	774.6944	1.44586	779.3403
1/32	1.44330	770.2070	1.44461	774.8394	1.44590	779.4857
1/16	1.44334	770.3516	1.44465	774.9844	1.44594	779.6311
3/32	1.44339	770.4962	1.44469	775.1294	1.44599	779.7765
1/8	1.44343	770.6407	1.44473	775.2744	1.44603	779.9220
5/32	1.44347	770.7853	1.44477	775.4194	1.44607	780.0674
3/16	1.44351	770.9299	1.44481	775.5645	1.44611	780.2129
7/32	1.44355	771.0746	1.44485	775.7095	1.44615	780.3584
1/4	1.44359	771.2192	1.44489	775.8546	1.44619	780.5039
9/32	1.44363	771.3638	1.44493	775.9997	1.44623	780.6494
5/16	1.44367	771.5085	1.44497	776.1448	1.44627	780.7949
11/32	1.44371	771.6532	1.44501	776.2899	1.44631	780.9405
3/8	1.44375	771.7979	1.44505	776.4350	1.44635	781.0860
13/32	1.44379	771.9426	1.44509	776.5801	1.44639	781.2316
7/16	1.44383	772.0873	1.44513	776.7253	1.44643	781.3772
15/32	1.44387	772.2320	1.44517	776.8704	1.44647	781.5228
1/2	1.44391	772.3767	1.44521	777.0156	1.44651	781.6684
17/32	1.44396	772.5215	1.44526	777.1608	1.44655	781.8140
9/16	1.44400	772.6663	1.44530	777.3060	1.44659	781.9597
19/32	1.44404	772.8110	1.44534	777.4512	1.44663	782.1053
5/8	1.44408	772.9558	1.44538	777.5965	1.44667	782.2510
21/32	1.44412	773.1006	1.44542	777.7417	1.44671	782.3967
11/16	1.44416	773.2455	1.44546	777.8870	1.44675	782.5423
23/32	1.44420	773.3903	1.44550	778.0322	1.44679	782.6880
3/4	1.44424	773.5352	1.44554	778.1775	1.44683	782.8338
25/32	1.44428	773.6800	1.44558	778.3228	1.44688	782.9795
13/16	1.44432	773.8249	1.44562	778.4681	1.44692	783.1252
27/32	1.44436	773.9698	1.44566	778.6135	1.44696	783.2710
7/8	1.44440	774.1147	1.44570	778.7588	1.44700	783.4168
29/32	1.44444	774.2596	1.44574	778.9041	1.44704	783.5626
15/16	1.44448	774.4045	1.44578	779.0495	1.44708	783.7084
31/32	1.44452	774.5495	1.44582	779.1949	1.44712	783.8542
1	1.44457	774.6944	1.44586	779.3403	1.44716	784.0000

28′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.44716	784.0000	1.44845	788.6736	1.44974	793.3611
1/32	1.44720	784.1458	1.44849	788.8199	1.44978	793.5078
1/16	1.44724	784.2917	1.44853	788.9662	1.44982	793.6545
3/32	1.44728	784.4376	1.44857	789.1125	1.44986	793.8013
1/8	1.44732	784.5834	1.44861	789.2588	1.44990	793.9480
5/32	1.44736	784.7293	1.44865	789.4051	1.44994	794.0948
3/16	1.44740	784.8752	1.44869	789.5515	1.44998	794.2416
7/32	1.44744	785.0212	1.44873	789.6978	1.45002	794.3884
1/4	1.44748	785.1671	1.44877	789.8442	1.45006	794.5352
9/32	1.44752	785.3130	1.44881	789.9906	1.45010	794.6820
5/16	1.44756	785.4590	1.44885	790.1370	1.45014	794.8288
11/32	1.44760	785.6050	1.44889	790.2834	1.45018	794.9756
3/8	1.44764	785.7510	1.44893	790.4298	1.45022	795.1225
13/32	1.44768	785.8970	1.44897	790.5762	1.45026	795.2694
7/16	1.44772	786.0430	1.44901	790.7227	1.45030	795.4163
15/32	1.44776	786.1890	1.44905	790.8691	1.45034	795.5632
1/2	1.44780	786.3351	1.44909	791.0156	1.45038	795.7101
17/32	1.44784	786.4811	1.44913	791.1621	1.45042	795.8570
9/16	1.44788	786.6272	1.44917	791.3086	1.45046	796.0039
19/32	1.44792	786.7733	1.44921	791.4551	1.45050	796.1509
5/8	1.44797	786.9194	1.44925	791.6017	1.45054	796.2979
21/32	1.44801	787.0655	1.44929	791.7482	1.45058	796.4448
11/16	1.44805	787.2116	1.44933	791.8948	1.45062	796.5918
23/32	1.44809	787.3578	1.44937	792.0413	1.45066	796.7388
3/4	1.44813	787.5039	1.44941	792.1879	1.45070	796.8859
25/32	1.44817	787.6501	1.44945	792.3345	1.45074	797.0329
13/16	1.44821	787.7963	1.44949	792.4811	1.45078	797.1799
27/32	1.44825	787.9424	1.44953	792.6278	1.45082	797.3270
7/8	1.44829	788.0886	1.44957	792.7744	1.45086	797.4741
29/32	1.44833	788.2349	1.44961	792.9211	1.45090	797.6212
15/16	1.44837	788.3811	1.44966	793.0677	1.45094	797.7683
31/32	1.44841	788.5274	1.44970	793.2144	1.45098	797.9154
1	1.44845	788.6736	1.44974	793.3611	1.45102	798.0625

28′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.45102	798.0625	1.45230	802.7778	1.45357	807.5069
1/32	1.45106	798.2096	1.45234	802.9254	1.45361	807.6550
1/16	1.45110	798.3568	1.45238	803.0729	1.45365	807.8030
3/32	1.45114	798.5040	1.45242	803.2205	1.45369	807.9510
1/8	1.45118	798.6512	1.45246	803.3682	1.45373	808.0991
5/32	1.45122	798.7983	1.45250	803.5158	1.45377	808.2471
3/16	1.45126	798.9456	1.45254	803.6634	1.45381	808.3952
7/32	1.45130	799.0928	1.45258	803.8111	1.45385	808.5433
1/4	1.45134	799.2400	1.45262	803.9588	1.45389	808.6914
9/32	1.45138	799.3873	1.45266	804.1065	1.45393	808.8395
5/16	1.45142	799.5345	1.45270	804.2542	1.45397	808.9877
11/32	1.45146	799.6818	1.45274	804.4019	1.45401	809.1358
3/8	1.45150	799.8291	1.45278	804.5496	1.45405	809.2840
13/32	1.45154	799.9764	1.45282	804.6973	1.45409	809.4321
7/16	1.45158	800.1237	1.45286	804.8451	1.45413	809.5803
15/32	1.45162	800.2711	1.45290	804.9928	1.45417	809.7285
1/2	1.45166	800.4184	1.45294	805.1406	1.45421	809.8767
17/32	1.45170	800.5658	1.45298	805.2884	1.45425	810.0250
9/16	1.45174	800.7131	1.45302	805.4362	1.45429	810.1732
19/32	1.45178	800.8605	1.45306	805.5840	1.45433	810.3215
5/8	1.45182	801.0079	1.45310	805.7319	1.45437	810.4697
21/32	1.45186	801.1553	1.45314	805.8797	1.45441	810.6180
11/16	1.45190	801.3028	1.45317	806.0276	1.45445	810.7663
23/32	1.45194	801.4502	1.45321	806.1755	1.45449	810.9146
3/4	1.45198	801.5977	1.45325	806.3234	1.45453	811.0629
25/32	1.45202	801.7451	1.45329	806.4713	1.45457	811.2113
13/16	1.45206	801.8926	1.45333	806.6192	1.45461	811.3596
27/32	1.45210	802.0401	1.45337	806.7671	1.45465	811 5080
7/8	1.45214	802.1876	1.45341	806.9150	1.45469	811.6564
29/32	1.45218	802.3351	1.45345	807.0630	1.45473	811.8047
15/16	1.45222	802.4827	1.45349	807.2110	1.45477	811.9532
31/32	1.45226	802.6302	1.45353	807.3589	1.45481	812.1016
1	1.45230	802.7778	1.45357	807.5069	1.45484	812.2500

28′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.45484	812.2500	1.45611	817.0069	1.45738	821.7778
1/32	1.45488	812.3984	1.45615	817.1558	1.45742	821.9271
1/16	1.45492	812.5469	1.45619	817.3047	1.45746	822.0764
3/32	1.45496	812.6954	1.45623	817.4536	1.45750	822.2258
1/8	1.45500	812.8439	1.45627	817.6025	1.45753	822.3751
5/32	1.45504	812.9924	1.45631	817.7515	1.45757	822.5245
3/16	1.45508	813.1409	1.45635	817.9004	1.45761	822.6739
7/32	1.45512	813.2894	1.45639	818.0494	1.45765	822.8232
1/4	1.45516	813.4379	1.45643	818.1984	1.45769	822.9727
9/32	1.45520	813.5865	1.45647	818.3473	1.45773	823.1221
5/16	1.45524	813.7351	1.45651	818.4963	1.45777	823.2715
11/32	1.45528	813.8836	1.45655	818.6454	1.45781	823.4210
3/8	1.45532	814.0322	1.45659	818.7944	1·45785	823.5704
13/32	1.45536	814.1808	1.45663	818.9434	1.45789	823.7199
7/16	1.45540	814.3295	1.45667	819.0925	1.45793	823.8694
15/32	1.45544	814.4781	1.45671	819.2415	1.45797	824.0189
1/2	1.45548	814.6267	1.45675	819.3906	1.45801	824.1684
17/32	1.45552	814.7754	1.45679	819.5397	1.45805	824.3179
9/16	1.45556	814.9241	1.45682	819.6888	1.45809	824.4675
19/32	1.45560	815.0728	1.45686	819.8380	1.45813	824.6170
5/8	1.45564	815.2215	1.45690	819.9871	1.45817	824.7666
21/32	1 45568	815.3702	1.45694	820.1362	1.45820	824.9162
11/16	1.45572	815.5189	1.45698	820.2854	1.45824	825.0658
23/32	1.45576	815.6677	1.45702	820.4346	1.45828	825.2154
3/4	1.45580	815.8164	1.45706	820.5838	1.45832	825.3650
25/32	1.45584	815.9652	1.45710	820.7330	1.45836	825.5147
13/16	1.45588	816.1140	1.45714	820.8822	1.45840	825.6643
27/32	1.45591	816.2628	1.45718	821.0314	1.45844	825.8140
7/8	1.45595	816.4116	1.45722	821.1807	1.45848	825.9637
29/32	1.45599	816.5604	1.45726	821.3299	1.45852	826.1133
15/16	1.45603	816.7092	1.45730	821.4792	1.45856	826.2630
31/32	1.45607	816.8581	1.45734	821.6285	1.45860	826.4128
1	1.45611	817.0069	1.45738	821.7778	1.45864	826.5625

28′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.45864	826.5625	1.45989	831.3611	1.46115	836.1736
1/32	1.45868	826.7122	1.45993	831.5113	1.46119	836.3242
1/16	1.45872	826.8620	1.45997	831.6615	1.46123	836.4749
3/32	1.45876	827.0118	1.46001	831.8117	1.46127	836.6255
1/8	1.45880	827.1616	1.46005	831.9619	1.46130	836.7762
5/32	1.45883	827.3114	1.46009	832.1121	1.46134	836.9268
3/16	1.45887	827.4612	1.46013	832.2624	1.46138	837.0775
7/32	1.45891	827.6110	1.46017	832.4127	1.46142	837.2282
1/4	1.45895	827.7609	1.46021	832.5629	1.46146	837.3789
9/32	1.45899	827.9107	1.46025	832.7132	1.46150	837.5296
5/16	1.45903	828.0606	1.46029	832.8635	1.46154	837.6804
11/32	1.45907	828.2105	1.46033	833.0138	1.46158	837.8311
3/8	1.45911	828.3604	1.46037	833.1642	1.46162	837.9819
13/32	1.45915	828.5103	1.46040	833.3145	1.46166	838.1327
7/16	1.45919	828.6602	1.46044	833.4649	1.46170	838.2834
15/32	1.45923	828.8101	1.46048	833.6152	1.46173	838.4343
1/2	1.45927	828.9601	1.46052	833.7656	1.46177	838.5851
17/32	1.45931	829.1100	1.46056	833.9160	1.46181	838.7359
9/16	1.45935	829.2600	1.46060	834.0664	1.46185	838.8867
19/32	1.45938	829.4100	1.46064	834.2169	1.46189	839.0376
5/8	1.45942	829.5600	1.46068	834.3673	1.46193	839.1885
21/32	1.45946	829.7100	1.46072	834.5177	1.46197	839.3394
11/16	1.45950	829.8601	1.46076	834.6682	1.46201	839.4903
23/32	1.45954	830.0101	1.46080	834.8187	1.46205	839.6412
3/4	1.45958	830.1602	1.46084	834.9692	1.46209	839.7921
25/32	1.45962	830.3102	1.46087	835.1197	1.46212	839.9430
13/16	1.45966	830.4603	1.46091	835.2702	1.46216	840.0940
27/32	1.45970	830.6104	1.46095	835.4207	1.46220	840.2450
7/8	1.45974	830.7605	1.46099	835.5713	1.46224	840.3959
29/32	1.45978	830.9107	1.46103	835.7218	1.46228	840.5469
15/16	1.45982	831.0608	1.46107	835.8724	1.46232	840.6979
31/32	1.45986	831.2109	1.46111	836.0230	1.46236	840.8490
1	1.45989	831.3611	1.46115	836.1736	1.46240	841.0000

29′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.46240	841.0000	1.46364	845.8403	1.46489	850.6944
1/32	1.46244	841.1510	1.46368	845.9918	1.46493	850.8464
1/16	1.46248	841.3021	1.46372	846.1433	1.46496	850.9983
3/32	1.46251	841.4532	1.46376	846.2948	1.46500	851.1502
1/8	1.46255	841.6043	1.46380	846.4463	1.46504	851.3022
5/32	1.46259	841.7554	1.46384	846.5978	1.46508	851.4542
3/16	1.46263	841.9065	1.46388	846.7494	1.46512	851.6061
7/32	1·46267	842.0576	1.46392	846.9009	1.46516	851.7581
1/4	1.46271	842.2088	1.46396	847.0525	1.46520	851.9102
9/32	1.46275	842.3599	1.46399	847.2041	1.46524	852.0622
5/16	1.46279	842.5111	1.46403	847.3557	1.46527	852.2142
11/32	1.46283	842.6623	1.46407	847.5073	1.46531	852.3663
3/8	1.46287	842.8135	1.46411	847.6590	1.46535	852.5183
13/32	1.46290	842.9647	1.46415	847.8106	1.46539	852.6704
7/16	1.46294	843.1159	1.46419	847.9623	1.46543	852.8225
15/32	1.46298	843.2672	1.46423	848.1139	1.46547	852.9746
1/2	1.46302	843.4184	1.46427	848.2656	1.46551	853.1267
17/32	1.46306	843.5697	1.46430	848.4173	1.46555	853.2789
9/16	1.46310	843.7209	1.46434	848.5690	1.46558	853.4310
19/32	1.46314	843.8722	1.46438	848.7208	1.46562	853.5832
5/8	1.46318	844.0235	1.46442	848.8725	1.46566	853.7354
21/32	1.46322	844.1749	1.46446	849.0243	1.46570	853.8875
11/16	1.46326	844.3262	1.46450	849.1760	1.46574	854.0397
23/32	1.46329	844.4775	1.46454	849.3278	1.46578	854.1920
3/4	1.46333	844.6289	1.46458	849.4796	1.46582	854.3442
25/32	1.46337	844.7803	1.46462	849.6314	1.46586	854.4964
13/16	1.46341	844.9317	1.46465	849.7832	1.46589	854.6487
27/32	1.46345	845.0831	1.46469	849.9351	1.46593	854.8010
7/8	1.46349	845·2345	1.46473	850.0869	1.46597	854.9532
29/32	1.46353	845.3859	1.46477	850.2388	1.46601	855.1055
15/16	1.46357	845.5374	1.46481	850.3907	1.46605	855.2578
31/32	1.46361	845.6888	1.46485	850.5425	1.46609	855.4102
1	1.46364	845.8403	1.46489	850.6944	1.46613	855.5625

29′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.46613	855.5625	1.46736	860.4444	1.46859	865.3403
1/32	1.46616	855.7149	1.46740	860.5972	1.46863	865.4935
1/16	1.46620	855.8672	1.46744	860.7500	1.46867	865.6467
3/32	1.46624	856.0196	1.46748	860.9028	1.46871	865.8000
1/8	1.46628	856.1720	1.46752	861.0557	1.46875	865.9532
5/32	1.46632	856.3244	1.46755	861.2085	1.46879	866.1065
3/16	1.46636	856.4768	1.46759	861.3614	1.46882	866.2598
7/32	1.46640	856.6292	1.46763	861.5142	1.46886	866.4131
1/4	1.46644	856.7817	1.46767	861.6671	1.46890	866.5664
9/32	1.46647	856.9341	1.46771	861.8200	1.46894	866.7197
5/16	1.46651	857.0866	1.46775	861.9729	1.46898	866.8731
11/32	1.46655	857.2391	1.46779	862.1258	1.46902	867.0264
3/8	1.46659	857.3916	1.46782	862.2788	1.46905	867.1798
13/32	1.46663	857.5441	1.46786	862.4317	1.46909	867.3332
7/16	1.46667	857.6966	1.46790	862.5847	1.46913	867.4866
15/32	1.46671	857.8492	1.46794	862.7376	1.46917	867.6400
1/2	1.46674	858.0017	1.46798	862.8906	1.46921	867.7934
17/32	1.46678	858.1543	1.46802	863.0436	1.46925	867.9468
9/16	1.46682	858.3069	1.46805	863.1966	1.46928	868.1003
19/32	1.46686	858.4595	1.46809	863.3497	1.46932	868.2538
5/8	1.46690	858.6121	1.46813	863.5027	1.46936	868.4072
21/32	1.46694	858.7647	1.46817	863.6558	1.46940	868.5607
11/16	1.46698	858.9173	1.46821	863.8088	1.46944	868.7142
23/32	1.46701	859.0700	1.46825	863.9619	1.46948	868.8677
3/4	1.46705	859.2227	1.46829	864.1150	1.46952	869.0213
25/32	1.46709	859.3753	1.46832	864.2681	1.46955	869.1748
13/16	1.46713	859.5280	1.46836	864.4213	1.46959	869.3284
27/32	1.46717	859.6807	1.46840	864.5744	1.46963	869.4819
7/8	1.46721	859.8334	1.46844	864.7275	1.46967	869.6355
29/32	1.46725	859.9862	1.46848	864.8807	1.46971	869.7891
15/16	1.46728	860.1389	1.46852	865.0339	1.46975	869.9427
31/32	1.46732	860.2917	1.46856	865.1871	1.46978	870.0964
1	1.46736	860.4444	1.46859	865.3403	1.46982	870.2500

29′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.46982	870.2500	1.47105	875.1736	1.47227	880.1111
1/32	1.46986	870.4037	1.47109	875.3277	1.47231	880.2656
1/16	1.46990	870.5573	1.47112	875.4818	1.47234	880.4202
3/32	1.46994	870.7110	1.47116	875.6359	1.47238	880.5747
1/8	1.46998	870.8647	1.47120	875.7900	1.47242	880.7293
5/32	1.47001	871.0184	1.47124	875.9442	1.47246	880.8839
3/16	1.47005	871.1721	1.47128	876.0983	1.47250	881.0384
7/32	1.47009	871.3259	1.47131	876.2525	1.47254	881.1930
1/4	1.47013	871.4796	1.47135	876.4067	1.47257	881.3477
9/32	1.47017	871.6334	1.47139	876.5609	1.47261	881.5023
5/16	1.47021	871.7871	1.47143	876.7151	1.47265	881.6569
11/32	1.47024	871.9409	1.47147	876.8693	1.47269	881.8116
3/8	1.47028	872.0947	1.47151	877.0235	1.47273	881.9663
13/32	1.47032	872.2485	1.47154	877.1778	1.47276	882.1209
7/16	1.47036	872.4024	1.47158	877.3321	1.47280	882.2756
15/32	1.47040	872.5562	1.47162	877.4863	1.47284	882.4303
1/2	1.47043	872.7101	1.47166	877.6406	1.47288	882.5851
17/32	1.47047	872.8639	1.47170	877.7949	1.47292	882.7398
9/16	1.47051	873.0178	1.47173	877.9492	1.47295	882.8946
19/32	1.47055	873.1717	1.47177	878.1036	1.47299	883.0493
5/8	1.47059	873.3256	1.47181	878.2579	1.47303	883.2041
21/32	1.47063	873.4796	1.47185	878.4123	1.47307	883.3589
11/16	1.47066	873.6335	1.47189	878.5666	1.47311	883.5137
23/32	1.47070	873.7874	1.47193	878.7210	1.47314	883.6685
3/4	1.47074	873.9414	1.47196	878.8754	1.47318	883.8234
25/32	1.47078	874.0954	1.47200	879.0298	1.47322	883.9782
13/16	1.47082	874.2494	1.47204	879.1843	1.47326	884.1331
27/32	1.47086	874.4034	1.47208	879.3387	1.47330	884.2879
7/8	1.47089	874.5574	1.47212	879.4932	1.47333	884.4428
29/32	1.47093	874.7114	1.47215	879.6476	1.47337	884.5977
15/16	1.47097	874.8655	1.47219	879.8021	1.47341	884.7526
31/32	1.47101	875.0195	1.47223	879.9566	1.47345	884.9076
1	1.47105	875.1736	1.47227	880.1111	1.47349	885.0625

29′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.47349	885.0625	1.47470	890.0278	1.47591	895.0069
1/32	1.47352	885.2175	1.47474	890.1832	1.47595	895.1628
1/16	1.47356	885.3724	1.47478	890.3386	1.47599	895.3186
3/32	1.47360	885.5274	1.47482	890.4940	1.47603	895.4745
1/8	1.47364	885.6824	1.47485	890.6494	1.47606	895.6303
5/32	1.47368	885.8374	1.47489	890.8049	1.47610	895.7862
3/16	1.47372	885.9924	1.47493	890.9603	1.47614	895.9421
7/32	1.47375	886.1475	1.47497	891.1158	1.47618	896.0980
1/4	1.47379	886.3025	1.47500	891.2713	1.47622	896.2539
9/32	1.47383	886.4576	1.47504	891.4268	1.47625	896.4098
5/16	1.47387	886.6127	1.47508	891.5823	1.47629	896.5658
11/32	1.47390	886.7677	1.47512	891.7378	1.47633	896.7217
3/8	1.47394	886.9229	1.47516	891.8933	1.47637	896.8777
13/32	1.47398	887.0780	1.47519	892.0489	1.47640	897.0337
7/16	1.47402	887.2331	1.47523	892.2045	1.47644	897.1897
15/32	1.47406	887.3882	1.47527	892.3600	1.47648	897.3457
1/2	1.47409	887.5434	1.47531	892.5156	1.47652	897.5017
17/32	1.47413	887.6986	1.47535	892.6712	1.47656	897.6578
9/16	1.47417	887.8538	1.47538	892.8269	1.47659	897.8138
19/32	1.47421	888.0090	1.47542	892.9825	1.47663	897.9699
5/8	1.47425	888.1642	1.47546	893.1381	1.47667	898.1260
21/32	1.47428	888.3194	1.47550	893.2938	1.47671	898.2821
11/16	1.47432	888.4746	1.47553	893.4495	1.47674	898.4382
23/32	1.47436	888.6299	1.47557	893.6051	1.47678	898.5943
3/4	1.47440	888.7852	1.47561	893.7609	1.47682	898.7504
25/32	1.47444	888.9404	1.47565	893.9166	1.47686	898.9066
13/16	1.47447	889.0957	1.47569	894.0723	1.47690	899.0627
27/32	1.47451	889.2510	1.47572	894.2280	1.47693	899.2189
7/8	1.47455	889.4064	1.47576	894.3838	1.47697	899.3751
29/32	1.47459	889.5617	1.47580	894.5396	1.47701	899.5313
15/16	1.47463	889.7170	1.47584	894.6953	1.47705	899.6875
31/32	1.47466	889.8724	1.47588	894.8511	1.47708	899.8438
1	1.47470	890.0278	1.47591	895.0069	1.47712	900.0000

30′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.47712	900.0000	1.47833	905.0069	1.47953	910.0278
1/32	1.47716	900.1563	1.47836	905.1636	1.47956	910.1849
1/16	1.47720	900.3125	1.47840	905.3203	1.47960	910.3420
3/32	1.47723	900.4688	1.47844	905.4771	1.47964	910.4992
1/8	1.47727	900.6251	1.47848	905.6338	1.47968	910.6564
5/32	1.47731	900.7814	1.47851	905.7905	1.47971	910.8135
3/16	1.47735	900.9377	1.47855	905.9473	1.47975	910.9707
7/32	1.47739	901.0941	1.47859	906.1041	1.47979	911.1279
1/4	1.47742	901.2504	1.47863	906.2609	1.47983	911.2852
9/32	1.47746	901.4068	1.47866	906.4176	1.47986	911.4424
5/16	1.47750	901.5632	1.47870	906.5745	1.47990	911.5996
11/32	1.47754	901.7196	1.47874	906.7313	1.47994	911.7569
3/8	1.47757	901.8760	1.47878	906.8881	1.47998	911.9142
13/32	1.47761	902.0324	1.47881	907.0450	1.48001	912.0715
7/16	1.47765	902.1888	1.47885	907.2018	1.48005	912.2288
15/32	1.47769	902.3453	1.47889	907.3587	1.48009	912.3861
1/2	1.47772	902.5017	1.47893	907.5156	1.48013	912.5434
17/32	1.47776	902.6582	1.47896	907.6725	1.48016	912.7007
9/16	1.47780	902.8147	1.47900	907.8295	1.48020	912.8581
19/32	1.47784	902.9712	1.47904	907.9864	1.48024	913.0155
5/8	1.47787	903.1277	1.47908	908.1433	1.48028	913.1729
21/32	1.47791	903.2842	1.47911	908.3003	1.48031	913.3302
11/16	1.47795	903.4408	1.47915	908.4573	1.48035	913.4877
23/32	1.47799	903.5973	1.47919	908.6143	1.48039	913.6451
3/4	1.47803	903.7539	1.47923	908.7713	1.48043	913.8025
25/32	1.47806	903.9105	1.47926	908.9283	1.48046	913.9600
13/16	1.47810	904.0671	1.47930	909.0853	1.48050	914.1174
27/32	1.47814	904.2237	1.47934	909.2424	1.48054	914.2749
7/8	1.47818	904.3803	1.47938	909.3994	1.48058	914.4324
29/32	1.47821	904.5370	1.47941	909.5565	1.48061	914.5899
15/16	1.47825	904.6936	1.47945	909.7136	1.48065	914.7474
31/32	1.47829	904.8503	1.47949	909.8707	1.48069	914.9050
1	1.47833	905.0069	1.47953	910.0278	1.48073	915.0625

30′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.48073	915.0625	1.48192	920.1111	1.48311	925.1736
1/32	1.48076	915.2201	1.48196	920.2691	1.48315	925.3320
1/16	1.48080	915.3776	1.48199	920.4271	1.48319	925.4905
3/32	1.48084	915.5352	1.48203	920.5851	1.48322	925.6489
1/8	1.48087	915.6928	1.48207	920.7432	1.48326	925.8074
5/32	1.48091	915.8504	1.48211	920.9012	1.48330	925.9659
3/16	1.48095	916.0081	1.48214	921.0593	1.48333	926.1244
7/32	1.48099	916.1657	1.48218	921.2173	1.48337	926.2829
1/4	1.48102	916.3234	1.48222	921.3754	1.48341	926.4414
9/32	1.48106	916.4810	1.48226	921.5335	1.48345	926.5999
5/16	1.48110	916.6387	1.48229	921.6917	1.48348	926.7585
11/32	1.48114	916.7964	1.48233	921.8498	1.48352	926.9171
3/8	1.48117	916.9541	1.48237	922.0079	1.48356	927.0756
13/32	1.48121	917.1118	1.48240	922.1661	1.48359	927.2342
7/16	1.48125	917.2696	1.48244	922.3242	1.48363	927.3928
15/32	1.48129	917.4273	1.48248	922.4824	1.48367	927.5514
1/2	1.48132	917.5851	1.48252	922.6406	1.48371	927.7101
17/32	1.48136	917.7428	1.48255	922.7988	1.48374	927.8687
9/16	1.48140	917.9006	1.48259	922.9571	1.48378	928.0274
19/32	1.48144	918.0584	1.48263	923.1153	1.48382	928.1860
5/8	1.48147	918.2163	1.48267	923.2735	1.48385	928.3447
21/32	1.48151	918.3741	1.48270	923.4318	1.48389	928.5034
11/16	1.48155	918.5319	1.48274	923.5901	1.48393	928.6621
23/32	1.48158	918.6898	1.48278	923.7484	1.48397	928.8209
3/4	1.48162	918.8477	1.48281	923.9067	1.48400	928.9796
25/32	1.48166	919.0055	1.48285	924.0650	1.48404	929.1384
13/16	1.48170	919.1634	1.48289	924.2233	1.48408	929.2971
27/32	1.48173	919.3214	1.48293	924.3817	1.48411	929.4559
7/8	1.48177	919.4793	1.48296	924.5400	1.48415	929.6147
29/32	1.48181	919.6372	1.48300	924.6984	1.48419	929.7735
15/16	1.48185	919.7952	1.48304	924.8568	1.48423	929.9323
31/32	1.48188	919.9531	1.48307	925.0152	1.48426	930.0912
1	1.48192	920.1111	1.48311	925.1736	1.48430	930.2500

30′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.48430	930.2500	1.48548	935.3403	1.48667	940.4444
1/32	1.48434	930.4089	1.48552	935.4996	1.48670	940.6042
1/16	1.48437	930.5677	1.48556	935.6589	1.48674	940.7639
3/32	1.48441	930.7266	1.48560	935.8182	1.48678	940.9237
1/8	1.48445	930.8855	1.48563	935.9775	1.48681	941.0834
5/32	1.48449	931.0444	1.48567	936.1369	1.48685	941.2432
3/16	1.48452	931.2034	1.48571	936.2963	1.48689	941.4030
7/32	1.48456	931.3623	1.48574	936.4556	1.48692	941.5628
1/4	1.48460	931.5213	1.48578	936.6150	1.48696	941.7227
9/32	1.48463	931.6802	1.48582	936.7744	1.48700	941.8825
5/16	1.48467	931.8392	1.48585	936.9338	1.48704	942.0423
11/32	1.48471	931.9982	1.48589	937.0933	1.48707	942.2022
3/8	1.48474	932.1572	1.48593	937.2527	1·48711	942.3621
13/32	1.48478	932.3163	1.48597	937.4122	1.48715	942.5220
7/16	1.48482	932.4753	1.48600	937.5716	1.48718	942.6819
15/32	1.48486	932.6343	1.48604	937.7311	1.48722	942.8418
1/2	1.48489	932.7934	1.48608	937.8906	1.48726	943.0017
17/32	1.48493	932.9525	1.48611	938.0501	1.48729	943.1617
9/16	1.48497	933.1116	1.48615	938.2097	1.48733	943.3216
19/32	1.48500	933.2707	1.48619	938.3692	1.48737	943.4816
5/8	1.48504	933.4298	1.48622	938.5288	1.48740	943.6416
21/32	1 48508	933.5889	1.48626	938.6883	1.48744	943.8016
11/16	1.48511	933.7481	1.48630	938.8479	1.48748	943.9616
23/32	1.48515	933.9072	1.48633	939.0075	1.48751	944.1216
3/4	1.48519	934.0664	1.48637	939.1671	1.48755	944.2817
25/32	1.48523	934.2256	1.48641	939.3267	1.48759	944.4417
13/16	1.48526	934.3848	1.48645	939.4864	1.48762	944.6018
27/32	1.48530	934.5440	1.48648	939.6460	1.48766	944.7619
7/8	1.48534	934.7032	1.48652	939.8057	1.48770	944.9220
29/32	1.48537	934.8625	1.48656	939.9653	1.48773	945.0821
15/16	1.48541	935.0217	1.48659	940.1250	1.48777	945.2422
31/32	1.48545	935.1810	1.48663	940.2847	1.48781	945.4024
1	1.48548	935.3403	1.48667	940.4444	1.48785	945.5625

30′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.48785	945.5625	1.48902	950.6944	1.49019	955.8403
1/32	1.48788	945.7227	1.48906	950.8550	1.49023	956.0013
1/16	1.48792	945.8828	1.48909	951.0157	1.49027	956.1624
3/32	1.48796	946.0430	1.48913	951.1763	1.49030	956.3234
1/8	1.48799	946.2032	1.48917	951.3369	1.49034	956.4845
5/32	1.48803	946.3635	1.48920	951.4976	1.49038	956.6456
3/16	1.48807	946.5237	1.48924	951.6582	1.49041	956.8067
7/32	1.48810	946.6839	1.48928	951.8189	1.49045	956.9678
1/4	1.48814	946.8442	1.48931	951.9796	1.49049	957.1289
9/32	1.48818	947.0045	1.48935	952.1403	1.49052	957.2900
5/16	1.48821	947.1647	1.48939	952.3010	1.49056	957.4512
11/32	1.48825	947.3250	1.48942	952.4618	1.49059	957.6124
3/8	1.48829	947.4854	1.48946	952.6225	1.49063	957.7735
13/32	1.48832	947.6457	1.48950	952.7833	1.49067	957.9347
7/16	1.48836	947.8060	1.48953	952.9440	1.49070	958.0959
15/32	1.48840	947.9664	1.48957	953.1048	1.49074	958.2572
1/2	1.48843	948.1267	1.48961	953.2656	1.49078	958.4184
17/32	1.48847	948.2871	1.48964	953.4264	1.49081	958.5797
9/16	1.48851	948.4475	1.48968	953.5873	1.49085	958.7409
19/32	1.48854	948.6079	1.48972	953.7481	1.49089	958.9022
5/8	1.48858	948.7683	1.48975	953.9090	1.49092	959.0635
21/32	1.48862	948.9288	1.48979	954.0698	1.49096	959.2248
11/16	1.48865	949.0892	1.48983	954.2307	1.49100	959.3861
23/32	1.48869	949.2497	1.48986	954.3916	1.49103	959.5474
3/4	1.48873	949.4102	1.48990	954.5525	1.49107	959.7088
25/32	1.48876	949.5706	1.48994	954.7134	1.49111	959.8701
13/16	1.48880	949.7311	1.48997	954.8744	1.49114	960.0315
27/32	1.48884	949.8917	1.49001	955.0353	1.49118	960.1929
7/8	1.48887	950.0522	1.49005	955.1963	1.49122	960.3543
29/32	1.48891	950.2127	1.49008	955.3573	1.49125	960.5157
15/16	1.48895	950.3733	1.49012	955.5183	1.49129	960.6771
31/32	1.48898	950.5339	1.49016	955.6793	1.49133	960.8385
1	1.48902	950.6944	1.49019	955.8403	1.49136	961.0000

31′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.49136	961.0000	1.49253	966.1736	1.49369	971.3611
1/32	1.49140	961.1615	1.49256	966.3355	1.49373	971.5234
1/16	1.49143	961.3229	1.49260	966.4974	1.49376	971.6858
3/32	1.49147	961.4844	1.49264	966.6593	1.49380	971.8482
1/8	1.49151	961.6459	1.49267	966.8213	1.49384	972.0105
5/32	1.49154	961.8075	1.49271	966.9832	1.49387	972.1729
3/16	1.49158	961.9690	1.49275	967.1452	1.49391	972.3353
7/32	1·49162	962.1305	1.49278	967.3072	1.49394	972.4977
1/4	1.49165	962.2921	1.49282	967.4692	1.49398	972.6602
9/32	1.49169	962.4537	1.49285	967.6312	1.49402	972.8226
5/16	1.49173	962.6153	1.49289	967.7932	1.49405	972.9851
11/32	1.49176	962.7769	1.49293	967.9552	1.49409	973.1475
3/8	1.49180	962.9385	1.49296	968.1173	1.49413	973.3100
13/32	1.49184	963.1001	1.49300	968.2794	1.49416	973.4725
7/16	1.49187	963.2617	1.49304	968.4414	1.49420	973.6350
15/32	1.49191	963.4234	1.49307	968.6035	1.49423	973.7975
1/2	1.49195	963.5851	1.49311	968.7656	1.49427	973.9601
17/32	1.49198	963.7468	1.49315	968.9277	1.49431	974.1226
9/16	1.49202	963.9084	1.49318	969.0899	1.49434	974.2852
19/32	1.49205	964.0702	1.49322	969.2520	1.49438	974.4478
5/8	1.49209	964.2319	1.49325	969.4142	1.49442	974.6104
21/32	1.49213	964.3936	1.49329	969.5763	1.49445	974.7730
11/16	1.49216	964.5554	1.49333	969.7385	1.49449	974.9356
23/32	1.49220	964.7171	1.49336	969.9007	1.49452	975.0982
3/4	1.49224	964.8789	1.49340	970.0629	1.49456	975.2609
25/32	1.49227	965.0407	1.49344	970.2252	1.49460	975.4235
13/16	1.49231	965.2025	1.49347	970.3874	1.49463	975.5862
27/32	1.49235	965.3643	1.49351	970.5496	1.49467	975.7489
7/8	1.49238	965.5261	1.49355	970.7119	1.49471	975.9116
29/32	1.49242	965.6880	1.49358	970.8742	1.49474	976.0743
15/16	1.49245	965.8499	1.49362	971.0365	1.49478	976.2370
31/32	1.49249	966.0117	1.49365	971.1988	1.49481	976.3997
1	1.49253	966.1736	1.49369	971.3611	1.49485	976.5625

31′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.49485	976.5625	1.49601	981.7778	1.49716	987.0069
1/32	1.49489	976.7253	1.49604	981.9410	1.49720	987.1706
1/16	1.49492	976.8880	1.49608	982.1042	1.49723	987.3342
3/32	1.49496	977.0508	1.49611	982.2674	1.49727	987.4979
⅛	1.49499	977.2137	1.49615	982.4307	1.49730	987.6616
5/32	1.49503	977.3765	1.49619	982.5939	1.49734	987.8253
3/16	1.49507	977.5393	1.49622	982.7572	1.49738	987.9890
7/32	1.49510	977.7022	1.49626	982.9205	1.49741	988.1527
¼	1.49514	977.8650	1.49630	983.0838	1.49745	988.3164
9/32	1.49518	978.0279	1.49633	983.2471	1.49748	988.4802
5/16	1.49521	978.1908	1.49637	983.4104	1.49752	988.6439
11/32	1.49525	978.3537	1.49640	983.5737	1.49756	988.8077
⅜	1.49528	978.5166	1.49644	983.7371	1.49759	988.9715
13/32	1.49532	978.6795	1.49648	983.9005	1.49763	989.1353
7/16	1.49536	978.8425	1.49651	984.0638	1.49766	989.2991
15/32	1.49539	979.0054	1.49655	984.2272	1.49770	989.4629
½	1.49543	979.1684	1.49658	984.3906	1.49774	989.6267
17/32	1.49546	979.3314	1.49662	984.5540	1.49777	989.7906
9/16	1.49550	979.4944	1.49666	984.7175	1.49781	989.9545
19/32	1.49554	979.6574	1.49669	984.8809	1.49784	990.1183
⅝	1.49557	979.8204	1.49673	985.0444	1.49788	990.2822
21/32	1.49561	979.9835	1.49676	985.2079	1.49792	990.4461
11/16	1.49565	980.1465	1.49680	985.3713	1.49795	990.6101
23/32	1.49568	980.3096	1.49684	985.5348	1.49799	990.7740
¾	1.49572	980.4727	1.49687	985.6984	1.49802	990.9379
25/32	1.49575	980.6357	1.49691	985.8619	1.49806	991.1019
13/16	1.49579	980.7989	1.49694	986.0254	1.49810	991.2659
27/32	1.49583	980.9620	1.49698	986.1890	1.49813	991.4299
⅞	1.49586	981.1251	1.49702	986.3525	1.49817	991.5939
29/32	1.49590	981.2883	1.49705	986.5161	1.49820	991.7579
15/16	1.49593	981.4514	1.49709	986.6797	1.49824	991.9219
31/32	1.49597	981.6146	1.49712	986.8433	1.49827	992.0859
1	1.49601	981.7778	1.49716	987.0069	1.49831	992.2500

31′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.49831	992.2500	1.49946	997.5069	1.50060	1002.7778
1/32	1.49835	992.4141	1.49949	997.6714	1.50064	1002.9427
1/16	1.49838	992.5782	1.49953	997.8360	1.50067	1003.1077
3/32	1.49842	992.7422	1.49957	998.0005	1.50071	1003.2726
⅛	1.49845	992.9064	1.49960	998.1650	1.50075	1003.4376
5/32	1.49849	993.0705	1.49964	998.3296	1.50078	1003.6026
3/16	1.49853	993.2346	1.49967	998.4942	1.50082	1003.7676
7/32	1.49856	993.3988	1.49971	998.6588	1.50085	1003.9326
¼	1.49860	993.5629	1.49974	998.8234	1.50089	1004.0977
9/32	1.49863	993.7271	1.49978	998.9880	1.50092	1004.2627
5/16	1.49867	993.8913	1.49982	999.1526	1.50096	1004.4278
11/32	1.49871	994.0555	1.49985	999.3172	1.50100	1004.5928
⅜	1.49874	994.2197	1.49989	999.4819	1.50103	1004.7579
13/32	1.49878	994.3840	1.49992	999.6465	1.50107	1004.9230
7/16	1.49881	994.5482	1.49996	999.8112	1.50110	1005.0881
15/32	1.49885	994.7125	1.49999	999.9759	1.50114	1005.2533
½	1.49888	994.8767	1.50003	1000.1406	1.50117	1005.4184
17/32	1.49892	995.0410	1.50007	1000.3053	1.50121	1005.5836
9/16	1.49896	995.2053	1.50010	1000.4701	1.50124	1005.7487
19/32	1.49899	995.3696	1.50014	1000.6348	1.50128	1005.9139
⅝	1.49903	995.5340	1.50017	1000.7996	1.50132	1006.0791
21/32	1.49906	995.6983	1.50021	1000.9644	1.50135	1006.2443
11/16	1.49910	995.8627	1.50025	1001.1292	1.50139	1006.4095
23/32	1.49914	996.0270	1.50028	1001.2940	1.50142	1006.5748
¾	1.49917	996.1914	1.50032	1001.4588	1.50146	1006.7400
25/32	1.49921	996.3558	1.50035	1001.6236	1.50149	1006.9053
13/16	1.49924	996.5202	1.50039	1001.7884	1.50153	1007.0706
27/32	1.49928	996.6846	1.50042	1001.9533	1.50157	1007.2358
⅞	1.49931	996.8491	1.50046	1002.1182	1.50160	1007.4012
29/32	1.49935	997.0135	1.50050	1002.2830	1.50164	1007.5665
15/16	1.49939	997.1780	1.50053	1002.4479	1.50167	1007.7318
31/32	1.49942	997.3425	1.50057	1002.6129	1.50171	1007.8971
1	1.49946	997.5069	1.50060	1002.7778	1.50174	1008.0625

31′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.50174	1008.0625	1.50288	1013.3611	1.50402	1018.6736
1/32	1.50178	1008.2279	1.50292	1013.5269	1.50405	1018.8399
1/16	1.50181	1008.3933	1.50295	1013.6927	1.50409	1019.0061
3/32	1.50185	1008.5587	1.50299	1013.8586	1.50412	1019.1724
1/8	1.50189	1008.7241	1.50302	1014.0244	1.50416	1019.3387
5/32	1.50192	1008.8895	1.50306	1014.1903	1.50419	1019.5049
3/16	1.50196	1009.0549	1.50310	1014.3561	1.50423	1019.6713
7/32	1.50199	1009.2204	1.50313	1014.5220	1.50427	1019.8376
1/4	1.50203	1009.3859	1.50317	1014.6879	1.50430	1020.0039
9/32	1.50206	1009.5513	1.50320	1014.8538	1.50434	1020.1703
5/16	1.50210	1009.7168	1.50324	1015.0198	1.50437	1020.3366
11/32	1.50214	1009.8823	1.50327	1015.1857	1.50441	1020.5030
3/8	1.50217	1010.0479	1.50331	1015.3517	1.50444	1020.6694
13/32	1.50221	1010.2134	1.50334	1015.5176	1.50448	1020.8358
7/16	1.50224	1010.3789	1.50338	1015.6836	1.50451	1021.0022
15/32	1.50228	1010.5445	1.50341	1015.8496	1.50455	1021.1686
1/2	1.50231	1010.7101	1.50345	1016.0156	1.50458	1021.3351
17/32	1.50235	1010.8757	1.50349	1016.1816	1.50462	1021.5015
9/16	1.50238	1011.0413	1.50352	1016.3477	1.50465	1021.6680
19/32	1.50242	1011.2069	1.50356	1016.5137	1.50469	1021.8345
5/8	1.50246	1011.3725	1.50359	1016.6798	1.50473	1022.0010
21/32	1.50249	1011.5381	1.50363	1016.8459	1.50476	1022.1675
11/16	1.50253	1011.7038	1.50366	1017.0120	1.50480	1022.3340
23/32	1.50256	1011.8695	1.50370	1017.1781	1.50483	1022.5005
3/4	1.50260	1012.0352	1.50373	1017.3442	1.50487	1022.6671
25/32	1.50263	1012.2009	1.50377	1017.5103	1.50490	1022.8337
13/16	1.50267	1012.3666	1.50380	1017.6765	1.50494	1023.0002
27/32	1.50270	1012.5323	1.50384	1017.8426	1.50497	1023.1668
7/8	1.50274	1012.6980	1.50388	1018.0088	1.50501	1023.3334
29/32	1.50278	1012.8638	1.50391	1018.1750	1.50504	1023.5001
15/16	1.50281	1013.0295	1.50395	1018.3412	1.50508	1023.6667
31/32	1.50285	1013.1953	1.50398	1018.5074	1.50511	1023.8333
1	1.50288	1013.3611	1.50402	1018.6736	1.50515	1024.0000

32′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.50515	1024.0000	1.50628	1029.3403	1.50741	1034.6944
1/32	1.50519	1024.1667	1.50631	1029.5074	1.50744	1034.8620
1/16	1.50522	1024.3334	1.50635	1029.6745	1.50748	1035.0295
3/32	1.50526	1024.5001	1.50639	1029.8416	1.50751	1035.1971
1/8	1.50529	1024.6668	1.50642	1030.0088	1.50755	1035.3647
5/32	1.50533	1024.8335	1.50646	1030.1760	1.50758	1035.5323
3/16	1.50536	1025.0002	1.50649	1030.3431	1.50762	1035.6999
7/32	1.50540	1025.1670	1.50653	1030.5103	1.50765	1035.8675
1/4	1.50543	1025.3338	1.50656	1030.6775	1.50769	1036.0352
9/32	1.50547	1025.5005	1.50660	1030.8447	1.50772	1036.2028
5/16	1.50550	1025.6673	1.50663	1031.0120	1.50776	1036.3705
11/32	1.50554	1025.8342	1.50667	1031.1792	1.50779	1036.5381
3/8	1.50557	1026.0010	1.50670	1031.3465	1.50783	1036.7058
13/32	1.50561	1026.1678	1.50674	1031.5137	1.50786	1036.8735
7/16	1.50564	1026.3347	1.50677	1031.6810	1.50790	1037.0413
15/32	1.50568	1026.5015	1.50681	1031.8483	1.50793	1037.2090
1/2	1.50572	1026.6684	1.50684	1032.0156	1.50797	1037.3767
17/32	1.50575	1026.8353	1.50688	1032.1829	1.50800	1037.5445
9/16	1.50579	1027.0022	1.50691	1032.3503	1.50804	1037.7123
19/32	1.50582	1027.1691	1.50695	1032.5176	1.50807	1037.8801
5/8	1.50586	1027.3360	1.50698	1032.6850	1.50811	1038.0479
21/32	1.50589	1027.5030	1.50702	1032.8524	1.50814	1038.2157
11/16	1.50593	1027.6699	1.50705	1033.0198	1.50818	1038.3835
23/32	1.50596	1027.8369	1.50709	1033.1872	1.50821	1038.5513
3/4	1.50600	1028.0039	1.50712	1033.3546	1.50825	1038.7192
25/32	1.50603	1028.1709	1.50716	1033.5220	1.50828	1038.8871
13/16	1.50607	1028.3379	1.50720	1033.6895	1.50832	1039.0549
27/32	1.50610	1028.5049	1.50723	1033.8569	1.50835	1039.2228
7/8	1.50614	1028.6720	1.50727	1034.0244	1.50839	1039.3907
29/32	1.50617	1028.8390	1.50730	1034.1919	1.50842	1039.5587
15/16	1.50621	1029.0061	1.50734	1034.3594	1.50846	1039.7266
31/32	1.50624	1029.1732	1.50737	1034.5269	1.50849	1039.8945
1	1.50628	1029.3403	1.50741	1034.6944	1.50853	1040.0625

32′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.50853	1040.0625	1.50965	1045.4444	1.51077	1050.8403
1/32	1.50856	1040.2305	1.50969	1045.6129	1.51080	1051.0091
1/16	1.50860	1040.3985	1.50972	1045.7813	1.51084	1051.1780
3/32	1.50863	1040.5665	1.50976	1045.9497	1.51087	1051.3468
⅛	1.50867	1040.7345	1.50979	1046.1182	1.51091	1051.5157
5/32	1.50871	1040.9025	1.50983	1046.2866	1.51094	1051.6846
3/16	1.50874	1041.0706	1.50986	1046.4551	1.51098	1051.8535
7/32	1.50878	1041.2386	1.50990	1046.6236	1.51101	1052.0225
¼	1.50881	1041.4067	1.50993	1046.7921	1.51105	1052.1914
9/32	1.50885	1041.5748	1.50997	1046.9606	1.51108	1052.3604
5/16	1.50888	1041.7429	1.51000	1047.1292	1.51112	1052.5293
11/32	1.50892	1041.9110	1.51004	1047.2977	1.51115	1052.6983
⅜	1.50895	1042.0791	1.51007	1047.4663	1.51119	1052.8673
13/32	1.50899	1042.2472	1.51010	1047.6348	1.51122	1053.0363
7/16	1.50902	1042.4154	1.51014	1047.8034	1.51126	1053.2053
15/32	1.50906	1042.5836	1.51017	1047.9720	1.51129	1053.3744
½	1.50909	1042.7517	1.51021	1048.1406	1.51133	1053.5434
17/32	1.50913	1042.9199	1.51024	1048.3093	1.51136	1053.7125
9/16	1.50916	1043.0881	1.51028	1048.4779	1.51140	1053.8815
19/32	1.50920	1043.2564	1.51031	1048.6465	1.51143	1054.0506
⅝	1.50923	1043.4246	1.51035	1048.8152	1.51147	1054.2197
21/32	1.50927	1043.5928	1.51038	1048.9839	1.51150	1054.3888
11/16	1.50930	1043.7611	1.51042	1049.1526	1.51154	1054.5580
23/32	1.50934	1043.9294	1.51045	1049.3213	1.51157	1054.7271
¾	1.50937	1044.0977	1.51049	1049.4900	1.51160	1054.8963
25/32	1.50941	1044.2660	1.51052	1049.6588	1.51164	1055.0654
13/16	1.50944	1044.4343	1.51056	1049.8275	1.51167	1055.2346
27/32	1.50948	1044.6026	1.51059	1049.9963	1.51171	1055.4038
⅞	1.50951	1044.7709	1.51063	1050.1650	1.51174	1055.5730
29/32	1.50955	1044.9393	1.51066	1050.3338	1.51178	1055.7422
15/16	1.50958	1045.1077	1.51070	1050.5026	1.51181	1055.9115
31/32	1.50962	1045.2760	1.51073	1050.6714	1.51185	1056.0807
1	1.50965	1045.4444	1.51077	1050.8403	1.51188	1056.2500

32′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.51188	1056.2500	1.51300	1061.6736	1.51410	1067.1111
1/32	1.51192	1056.4193	1.51303	1061.8433	1.51414	1067.2813
1/16	1.51195	1056.5886	1.51306	1062.0130	1.51417	1067.4514
3/32	1.51199	1056.7579	1.51310	1062.1828	1.51421	1067.6216
1/8	1.51202	1056.9272	1.51313	1062.3525	1.51424	1067.7918
5/32	1.51206	1057.0965	1.51317	1062.5223	1.51428	1067.9620
3/16	1.51209	1057.2659	1.51320	1062.6921	1.51431	1068.1322
7/32	1.51213	1057.4352	1.51324	1062.8619	1.51435	1068.3024
1/4	1.51216	1057.6046	1.51327	1063.0317	1.51438	1068.4727
9/32	1.51220	1057.7740	1.51331	1063.2015	1.51442	1068.6429
5/16	1.51223	1057.9434	1.51334	1063.3713	1.51445	1068.8132
11/32	1.51227	1058.1128	1.51338	1063.5412	1.51449	1068.9835
3/8	1.51230	1058.2822	1.51341	1063.7110	1.51452	1069.1538
13/32	1.51234	1058.4517	1.51345	1063.8809	1.51455	1069.3241
7/16	1.51237	1058.6211	1.51348	1064.0508	1.51459	1069.4944
15/32	1.51241	1058.7906	1.51352	1064.2207	1.51462	1069.6647
1/2	1.51244	1058.9601	1.51355	1064.3906	1.51466	1069.8351
17/32	1.51247	1059.1296	1.51359	1064.5606	1.51469	1070.0054
9/16	1.51251	1059.2991	1.51362	1064.7305	1.51473	1070.1758
19/32	1.51254	1059.4686	1.51365	1064.9005	1.51476	1070.3462
5/8	1.51258	1059.6381	1.51369	1065.0704	1.51480	1070.5166
21/32	1 51261	1059.8077	1.51372	1065.2404	1.51483	1070.6870
11/16	1.51265	1059.9772	1.51376	1065.4104	1.51487	1070.8574
23/32	1.51268	1060.1468	1.51379	1065.5804	1.51490	1071.0279
3/4	1.51272	1060.3164	1.51383	1065.7504	1.51493	1071.1984
25/32	1.51275	1060.4860	1.51386	1065.9205	1.51497	1071.3688
13/16	1.51279	1060.6556	1.51390	1066.0905	1.51500	1071.5393
27/32	1.51282	1060.8253	1.51393	1066.2606	1.51504	1071.7098
7/8	1.51286	1060.9949	1.51397	1066.4307	1.51507	1071.8803
29/32	1.51289	1061.1646	1.51400	1066.6008	1.51511	1072.0508
15/16	1.51293	1061.3342	1.51404	1066.7709	1.51514	1072.2214
31/32	1.51296	1061.5039	1.51407	1066.9410	1.51518	1072.3919
1	1.51300	1061.6736	1.51410	1067.1111	1.51521	1072.5625

32′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.51521	1072.5625	1.51631	1078.0278	1.51742	1083.5069
1/32	1.51525	1072.7331	1.51635	1078.1988	1.51745	1083.6784
1/16	1.51528	1072.9037	1.51638	1078.3698	1.51748	1083.8499
3/32	1.51531	1073.0743	1.51642	1078.5409	1.51752	1084.0213
1/8	1.51535	1073.2449	1.51645	1078.7119	1.51755	1084.1928
5/32	1.51538	1073.4155	1.51649	1078.8830	1.51759	1084.3643
3/16	1.51542	1073.5862	1.51652	1079.0541	1.51762	1084.5358
7/32	1.51545	1073.7568	1.51656	1079.2252	1.51766	1084.7074
1/4	1.51549	1073.9275	1.51659	1079.3963	1.51769	1084.8789
9/32	1.51552	1074.0982	1.51662	1079.5674	1.51772	1085.0505
5/16	1.51556	1074.2689	1.51666	1079.7385	1.51776	1085.2220
11/32	1.51559	1074.4396	1.51669	1079.9097	1.51779	1085.3936
3/8	1.51563	1074.6104	1.51673	1080.0808	1.51783	1085.5652
13/32	1.51566	1074.7811	1.51676	1080.2520	1.51786	1085.7368
7/16	1.51569	1074.9518	1.51680	1080.4232	1.51790	1085.9084
15/32	1.51573	1075.1226	1.51683	1080.5944	1.51793	1086.0801
1/2	1.51576	1075.2934	1.51687	1080.7656	1.51797	1086.2517
17/32	1.51580	1075.4642	1.51690	1080.9369	1.51800	1086.4234
9/16	1.51583	1075.6350	1.51693	1081.1081	1.51803	1086.5951
19/32	1.51587	1075.8058	1.51697	1081.2794	1.51807	1086.7668
5/8	1.51590	1075.9767	1.51700	1081.4506	1.51810	1086.9385
21/32	1.51594	1076.1475	1.51704	1081.6219	1.51814	1087.1102
11/16	1.51597	1076.3184	1.51707	1081.7932	1.51817	1087.2819
23/32	1.51600	1076.4893	1.51711	1081.9645	1.51821	1087.4537
3/4	1.51604	1076.6602	1.51714	1082.1359	1.51824	1087.6254
25/32	1.51607	1076.8311	1.51718	1082.3072	1.51827	1087.7972
13/16	1.51611	1077.0020	1.51721	1082.4785	1.51831	1087.9690
27/32	1.51614	1077.1729	1.51724	1082.6499	1.51834	1088.1408
7/8	1.51618	1077.3439	1.51728	1082.8213	1.51838	1088.3126
29/32	1.51621	1077.5148	1.51731	1082.9927	1.51841	1088.4844
15/16	1.51625	1077.6858	1.51735	1083.1641	1.51845	1088.6563
31/32	1.51628	1077.8568	1.51738	1083.3355	1.51848	1088.8281
1	1.51631	1078.0278	1.51742	1083.5069	1.51851	1089.0000

33′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.51851	1089.0000	1.51961	1094.5069	1.52070	1100.0278
1/32	1.51855	1089.1719	1.51964	1094.6793	1.52074	1100.2005
1/16	1.51858	1089.3438	1.51968	1094.8516	1.52077	1100.3733
3/32	1.51862	1089.5157	1.51971	1095.0239	1.52080	1100.5461
1/8	1.51865	1089.6876	1.51975	1095.1963	1.52084	1100.7189
5/32	1.51869	1089.8595	1.51978	1095.3687	1.52087	1100.8917
3/16	1.51872	1090.0315	1.51981	1095.5410	1.52091	1101.0645
7/32	1·51875	1090.2035	1.51985	1095.7134	1.52094	1101.2373
1/4	1.51879	1090.3754	1.51988	1095.8859	1.52097	1101.4102
9/32	1.51882	1090.5474	1.51992	1096.0583	1.52101	1101.5830
5/16	1.51886	1090.7194	1.51995	1096.2307	1.52104	1101.7559
11/32	1.51889	1090.8914	1.51999	1096.4032	1.52108	1101.9288
3/8	1.51893	1091.0635	1.52002	1096.5756	1.52111	1102.1017
13/32	1.51896	1091.2355	1.52005	1096.7481	1.52114	1102.2746
7/16	1.51899	1091.4076	1.52009	1096.9206	1.52118	1102.4475
15/32	1.51903	1091.5797	1.52012	1097.0931	1.52121	1102.6204
1/2	1.51906	1091.7517	1.52016	1097.2656	1.52125	1102.7934
17/32	1.51910	1091.9238	1.52019	1097.4382	1.52128	1102.9664
9/16	1.51913	1092.0959	1.52022	1097.6107	1.52132	1103.1394
19/32	1.51916	1092.2681	1.52026	1097.7833	1.52135	1103.3123
5/8	1.51920	1092.4402	1.52029	1097.9558	1.52138	1103.4854
21/32	1.51923	1092.6124	1.52033	1098.1284	1.52142	1103.6584
11/16	1.51927	1092.7845	1.52036	1098.3010	1.52145	1103.8314
23/32	1.51930	1092.9567	1.52039	1098.4736	1.52149	1104.0045
3/4	1.51934	1093.1289	1.52043	1098.6463	1.52152	1104.1775
25/32	1.51937	1093.3011	1.52046	1098.8189	1.52155	1104.3506
13/16	1.51940	1093.4733	1.52050	1098.9916	1.52159	1104.5237
27/32	1.51944	1093.6456	1.52053	1099.1642	1.52162	1104.6968
7/8	1.51947	1093.8178	1.52057	1099.3369	1.52166	1104.8699
29/32	1.51951	1093.9901	1.52060	1099.5096	1.52169	1105.0430
15/16	1.51954	1094.1624	1.52063	1099.6823	1.52172	1105.2162
31/32	1.51958	1094.3346	1.52067	1099.8550	1.52176	1105.3893
1	1.51961	1094.5069	1.52070	1100.0278	1.52179	1105.5625

33′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.52179	1105.5625	1.52288	1111.1111	1.52396	1116.6736
1/32	1.52183	1105.7357	1.52291	1111.2847	1.52400	1116.8477
1/16	1.52186	1105.9089	1.52295	1111.4584	1.52403	1117.0217
3/32	1.52189	1106.0821	1.52298	1111.6320	1.52406	1117.1958
1/8	1.52193	1106.2553	1.52301	1111.8057	1.52410	1117.3699
5/32	1.52196	1106.4286	1.52305	1111.9793	1.52413	1117.5440
3/16	1.52200	1106.6018	1.52308	1112.1530	1.52417	1117.7181
7/32	1.52203	1106.7751	1.52312	1112.3267	1.52420	1117.8923
1/4	1.52206	1106.9484	1.52315	1112.5004	1.52423	1118.0664
9/32	1.52210	1107.1216	1.52318	1112.6742	1.52427	1118.2406
5/16	1.52213	1107.2949	1.52322	1112.8479	1.52430	1118.4147
11/32	1.52217	1107.4683	1.52325	1113.0217	1.52434	1118.5889
3/8	1.52220	1107.6416	1.52329	1113.1954	1.52437	1118.7631
13/32	1.52223	1107.8149	1.52332	1113.3692	1.52440	1118.9373
7/16	1.52227	1107.9883	1.52335	1113.5430	1.52444	1119.1116
15/32	1.52230	1108.1617	1.52339	1113.7168	1.52447	1119.2858
1/2	1.52234	1108.3351	1.52342	1113.8906	1.52450	1119.4601
17/32	1.52237	1108.5085	1.52346	1114.0645	1.52454	1119.6343
9/16	1.52240	1108.6819	1.52349	1114.2383	1.52457	1119.8086
19/32	1.52244	1108.8553	1.52352	1114.4122	1.52461	1119.9829
5/8	1.52247	1109.0288	1.52356	1114.5860	1.52464	1120.1572
21/32	1.52251	1109.2022	1.52359	1114.7599	1.52467	1120.3315
11/16	1.52254	1109.3757	1.52362	1114.9338	1.52471	1120.5059
23/32	1.52257	1109.5492	1.52366	1115.1078	1.52474	1120.6802
3/4	1.52261	1109.7227	1.52369	1115.2817	1.52477	1120.8546
25/32	1.52264	1109.8962	1.52373	1115.4556	1.52481	1121.0290
13/16	1.52268	1110.0697	1.52376	1115.6296	1.52484	1121.2034
27/32	1.52271	1110.2432	1.52379	1115.8036	1.52488	1121.3778
7/8	1.52274	1110.4168	1.52383	1115.9775	1.52491	1121.5522
29/32	1.52278	1110.5903	1.52386	1116.1515	1.52494	1121.7266
15/16	1.52281	1110.7639	1.52390	1116.3255	1.52498	1121.9011
31/32	1.52284	1110.9375	1.52393	1116.4996	1.52501	1122.0755
1	1.52288	1111.1111	1.52396	1116.6736	1.52504	1122.2500

33′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.52504	1122.2500	1.52612	1127.8403	1.52720	1133.4444
1/32	1.52508	1122.4245	1.52616	1128.0152	1.52723	1133.6198
1/16	1.52511	1122.5990	1.52619	1128.1901	1.52727	1133.7952
3/32	1.52515	1122.7735	1.52622	1128.3651	1.52730	1133.9705
⅛	1.52518	1122.9480	1.52626	1128.5400	1.52733	1134.1459
5/32	1.52521	1123.1226	1.52629	1128.7150	1.52737	1134.3213
3/16	1.52525	1123.2971	1.52633	1128.8900	1.52740	1134.4968
7/32	1.52528	1123.4717	1.52636	1129.0650	1.52744	1134.6722
¼	1.52531	1123.6463	1.52639	1129.2400	1.52747	1134.8477
9/32	1.52535	1123.8209	1.52643	1129.4150	1.52750	1135.0231
5/16	1.52538	1123.9955	1.52646	1129.5901	1.52754	1135.1986
11/32	1.52542	1124.1701	1.52649	1129.7651	1.52757	1135.3741
⅜	1.52545	1124.3447	1.52653	1129.9402	1.52760	1135.5496
13/32	1.52548	1124.5194	1.52656	1130.1153	1.52764	1135.7251
7/16	1.52552	1124.6940	1.52660	1130.2904	1.52767	1135.9006
15/32	1.52555	1124.8687	1.52663	1130.4655	1.52770	1136.0762
½	1.52558	1125.0434	1.52666	1130.6406	1.52774	1136.2517
17/32	1.52562	1125.2181	1.52670	1130.8158	1.52777	1136.4273
9/16	1.52565	1125.3928	1.52673	1130.9909	1.52780	1136.6029
19/32	1.52569	1125.5676	1.52676	1131.1661	1.52784	1136.7785
⅝	1.52572	1125.7423	1.52680	1131.3413	1.52787	1136.9541
21/32	1.52575	1125.9171	1.52683	1131.5164	1.52791	1137.1297
11/16	1.52579	1126.0918	1.52686	1131.6917	1.52794	1137.3054
23/32	1.52582	1126.2666	1.52690	1131.8669	1.52797	1137.4810
¾	1.52585	1126.4414	1.52693	1132.0421	1.52801	1137.6567
25/32	1.52589	1126.6162	1.52696	1132.2173	1.52804	1137.8324
13/16	1.52592	1126.7910	1.52700	1132.3926	1.52807	1138.0081
27/32	1.52596	1126.9659	1.52703	1132.5679	1.52811	1138.1838
⅞	1.52599	1127.1407	1.52707	1132.7432	1.52814	1138.3595
29/32	1.52602	1127.3156	1.52710	1132.9185	1.52817	1138.5352
15/16	1.52606	1127.4905	1.52713	1133.0938	1.52821	1138.7110
31/32	1.52609	1127.6654	1.52717	1133.2691	1.52824	1138.8867
1	1.52612	1127.8403	1.52720	1133.4444	1.52827	1139.0625

33′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.52827	1139.0625	1.52934	1144.6944	1.53041	1150.3403
1/32	1.52831	1139.2383	1.52938	1144.8707	1.53045	1150.5169
1/16	1.52834	1139.4141	1.52941	1145.0469	1.53048	1150.6936
3/32	1.52837	1139.5899	1.52945	1145.2232	1.53051	1150.8703
1/8	1.52841	1139.7657	1.52948	1145.3994	1.53055	1151.0470
5/32	1.52844	1139.9416	1.52951	1145.5757	1.53058	1151.2237
3/16	1.52847	1140.1174	1.52955	1145.7520	1.53061	1151.4004
7/32	1.52851	1140.2933	1.52958	1145.9283	1.53065	1151.5772
1/4	1.52854	1140.4692	1.52961	1146.1046	1.53068	1151.7539
9/32	1.52858	1140.6451	1.52965	1146.2809	1.53071	1151.9307
5/16	1.52861	1140.8210	1.52968	1146.4573	1.53075	1152.1074
11/32	1.52864	1140.9969	1.52971	1146.6336	1.53078	1152.2842
3/8	1.52868	1141.1729	1.52975	1146.8100	1.53081	1152.4610
13/32	1.52871	1141.3488	1.52978	1146.9864	1.53085	1152.6379
7/16	1.52874	1141.5248	1.52981	1147.1628	1.53088	1152.8147
15/32	1.52878	1141.7007	1.52985	1147.3392	1.53091	1152.9915
1/2	1.52881	1141.8767	1.52988	1147.5156	1.53095	1153.1684
17/32	1.52884	1142.0527	1.52991	1147.6921	1.53098	1153.3453
9/16	1.52888	1142.2288	1.52995	1147.8685	1.53101	1153.5222
19/32	1.52891	1142.4048	1.52998	1148.0450	1.53105	1153.6991
5/8	1.52894	1142.5808	1.53001	1148.2215	1.53108	1153.8760
21/32	1.52898	1142.7569	1.53005	1148.3980	1.53111	1154.0529
11/16	1.52901	1142.9330	1.53008	1148.5745	1.53115	1154.2298
23/32	1.52904	1143.1091	1.53011	1148.7510	1.53118	1154.4068
3/4	1.52908	1143.2852	1.53015	1148.9275	1.53121	1154.5838
25/32	1.52911	1143.4613	1.53018	1149.1041	1.53125	1154.7607
13/16	1.52914	1143.6374	1.53021	1149.2806	1.53128	1154.9377
27/32	1.52918	1143.8135	1.53025	1149.4572	1.53131	1155.1148
7/8	1.52921	1143.9897	1.53028	1149.6338	1.53135	1155.2918
29/32	1.52924	1144.1659	1.53031	1149.8104	1.53138	1155.4688
15/16	1.52928	1144.3420	1.53035	1149.9870	1.53141	1155.6459
31/32	1.52931	1144.5182	1.53038	1150.1636	1.53145	1155.8229
1	1.52934	1144.6944	1.53041	1150.3403	1.53148	1156.0000

34′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.53148	1156.0000	1.53254	1161.6736	1.53360	1167.3611
1/32	1.53151	1156.1771	1.53258	1161.8511	1.53364	1167.5391
1/16	1.53155	1156.3542	1.53261	1162.0287	1.53367	1167.7170
3/32	1.53158	1156.5313	1.53264	1162.2062	1.53370	1167.8950
1/8	1.53161	1156.7084	1.53267	1162.3838	1.53373	1168.0730
5/32	1.53165	1156.8856	1.53271	1162.5614	1.53377	1168.2510
3/16	1.53168	1157.0627	1.53274	1162.7390	1.53380	1168.4291
7/32	1.53171	1157.2399	1.53277	1162.9166	1.53383	1168.6071
1/4	1.53174	1157.4171	1.53281	1163.0942	1.53387	1168.7852
9/32	1.53178	1157.5943	1.53284	1163.2718	1.53390	1168.9632
5/16	1.53181	1157.7715	1.53287	1163.4495	1.53393	1169.1413
11/32	1.53184	1157.9487	1.53291	1163.6271	1.53397	1169.3194
3/8	1.53188	1158.1260	1.53294	1163.8048	1.53400	1169.4975
13/32	1.53191	1158.3032	1.53297	1163.9825	1.53403	1169.6756
7/16	1.53194	1158.4805	1.53301	1164.1602	1.53407	1169.8538
15/32	1.53198	1158.6578	1.53304	1164.3379	1.53410	1170.0319
1/2	1.53201	1158.8351	1.53307	1164.5156	1.53413	1170.2101
17/32	1.53204	1159.0124	1.53311	1164.6934	1.53416	1170.3882
9/16	1.53208	1159.1897	1.53314	1164.8711	1.53420	1170.5664
19/32	1.53211	1159.3670	1.53317	1165.0489	1.53423	1170.7446
5/8	1.53214	1159.5444	1.53321	1165.2267	1.53426	1170.9229
21/32	1.53218	1159.7217	1.53324	1165.4045	1.53430	1171.1011
11/16	1.53221	1159.8991	1.53327	1165.5823	1.53433	1171.2793
23/32	1.53224	1160.0765	1.53330	1165.7601	1.53436	1171.4576
3/4	1.53228	1160.2539	1.53334	1165.9379	1.53440	1171.6359
25/32	1.53231	1160.4313	1.53337	1166.1158	1.53443	1171.8141
13/16	1.53234	1160.6088	1.53340	1166.2936	1.53446	1171.9924
27/32	1.53238	1160.7862	1.53344	1166.4715	1.53450	1172.1707
7/8	1.53241	1160.9636	1.53347	1166.6494	1.53453	1172.3491
29/32	1.53244	1161.1411	1.53350	1166.8273	1.53456	1172.5274
15/16	1.53248	1161.3186	1.53354	1167.0052	1.53459	1172.7058
31/32	1.53251	1161.4961	1.53357	1167.1832	1.53463	1172.8841
1	1.53254	1161.6736	1.53360	1167.3611	1.53466	1173.0625

34′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.53466	1173.0625	1.53572	1178.7778	1.53677	1184.5069
1/32	1.53469	1173.2409	1.53575	1178.9566	1.53680	1184.6862
1/16	1.53473	1173.4193	1.53578	1179.1354	1.53683	1184.8655
3/32	1.53476	1173.5977	1.53581	1179.3143	1.53687	1185.0448
1/8	1.53479	1173.7762	1.53585	1179.4932	1.53690	1185.2241
5/32	1.53483	1173.9546	1.53588	1179.6720	1.53693	1185.4034
3/16	1.53486	1174.1331	1.53591	1179.8509	1.53697	1185.5827
7/32	1.53489	1174.3115	1.53595	1180.0298	1.53700	1185.7621
1/4	1.53492	1174.4900	1.53598	1180.2088	1.53703	1185.9414
9/32	1.53496	1174.6685	1.53601	1180.3877	1.53706	1186.1208
5/16	1.53499	1174.8470	1.53605	1180.5667	1.53710	1186.3002
11/32	1.53502	1175.0256	1.53608	1180.7456	1.53713	1186.4796
3/8	1.53506	1175.2041	1.53611	1180.9246	1.53716	1186.6590
13/32	1.53509	1175.3827	1.53614	1181.1036	1.53720	1186.8384
7/16	1.53512	1175.5612	1.53618	1181.2826	1.53723	1187.0178
15/32	1.53516	1175.7398	1.53621	1181.4616	1.53726	1187.1973
1/2	1.53519	1175.9184	1.53624	1181.6406	1.53729	1187.3767
17/32	1.53522	1176.0970	1.53628	1181.8197	1.53733	1187.5562
9/16	1.53525	1176.2756	1.53631	1181.9987	1.53736	1187.7357
19/32	1.53529	1176.4543	1.53634	1182.1778	1.53739	1187.9152
5/8	1.53532	1176.6329	1.53637	1182.3569	1.53743	1188.0947
21/32	1.53535	1176.8116	1.53641	1182.5360	1.53746	1188.2743
11/16	1.53539	1176.9903	1.53644	1182.7151	1.53749	1188.4538
23/32	1.53542	1177.1690	1.53647	1182.8942	1.53752	1188.6334
3/4	1.53545	1177.3477	1.53651	1183.0734	1.53756	1188.8129
25/32	1.53549	1177.5264	1.53654	1183.2525	1.53759	1188.9925
13/16	1.53552	1177.7051	1.53657	1183.4317	1.53762	1189.1721
27/32	1.53555	1177.8838	1.53660	1183.6108	1.53766	1189.3517
7/8	1.53558	1178.0626	1.53664	1183.7900	1.53769	1189.5314
29/32	1.53562	1178.2414	1.53667	1183.9692	1.53772	1189.7110
15/16	1.53565	1178.4202	1.53670	1184.1485	1.53775	1189.8907
31/32	1.53568	1178.5990	1.53674	1184.3277	1.53779	1190.0703
1	1.53572	1178.7778	1.53677	1184.5069	1.53782	1190.2500

34′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.53782	1190.2500	1.53887	1196.0069	1.53991	1201.7778
1/32	1.53785	1190.4297	1.53890	1196.1871	1.53994	1201.9583
1/16	1.53788	1190.6094	1.53893	1196.3672	1.53998	1202.1389
3/32	1.53792	1190.7891	1.53896	1196.5474	1.54001	1202.3195
⅛	1.53795	1190.9689	1.53900	1196.7275	1.54004	1202.5001
5/32	1.53798	1191.1486	1.53903	1196.9077	1.54008	1202.6807
3/16	1.53802	1191.3284	1.53906	1197.0879	1.54011	1202.8614
7/32	1.53805	1191.5081	1.53910	1197.2681	1.54014	1203.0420
¼	1.53808	1191.6879	1.53913	1197.4484	1.54017	1203.2227
9/32	1.53811	1191.8677	1.53916	1197.6286	1.54021	1203.4033
5/16	1.53815	1192.0476	1.53919	1197.8088	1.54024	1203.5840
11/32	1.53818	1192.2274	1.53923	1197.9891	1.54027	1203.7647
⅜	1.53821	1192.4072	1.53926	1198.1694	1.54030	1203.9454
13/32	1.53825	1192.5871	1.53929	1198.3497	1.54034	1204.1261
7/16	1.53828	1192.7670	1.53932	1198.5300	1.54037	1204.3069
15/32	1.53831	1192.9468	1.53936	1198.7103	1.54040	1204.4876
½	1.53834	1193.1267	1.53939	1198.8906	1.54043	1204.6684
17/32	1.53838	1193.3066	1.53942	1199.0710	1.54047	1204.8492
9/16	1.53841	1193.4866	1.53946	1199.2513	1.54050	1205.0300
19/32	1.53844	1193.6665	1.53949	1199.4317	1.54053	1205.2108
⅝	1.53847	1193.8465	1.53952	1199.6121	1.54056	1205.3916
21/32	1 53851	1194.0264	1.53955	1199.7925	1.54060	1205.5724
11/16	1.53854	1194.2064	1.53959	1199.9729	1.54063	1205.7533
23/32	1.53857	1194.3864	1.53962	1200.1533	1.54066	1205.9341
¾	1.53861	1194.5664	1.53965	1200.3338	1.54069	1206.1150
25/32	1.53864	1194.7464	1.53968	1200.5142	1.54073	1206.2959
13/16	1.53867	1194.9265	1.53972	1200.6947	1.54076	1206.4768
27/32	1.53870	1195.1065	1.53975	1200.8752	1.54079	1206.6577
⅞	1.53874	1195.2866	1.53978	1201.0557	1.54082	1206.8387
29/32	1.53877	1195.4666	1.53981	1201.2362	1.54086	1207.0196
15/16	1.53880	1195.6467	1.53985	1201.4167	1.54089	1207.2005
31/32	1.53883	1195.8268	1.53988	1201.5972	1.54092	1207.3815
1	1.53887	1196.0069	1.53991	1201.7778	1.54095	1207.5625

34′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.54095	1207.5625	1.54200	1213.3611	1.54303	1219.1736
1/32	1.54099	1207.7435	1.54203	1213.5425	1.54307	1219.3555
1/16	1.54102	1207.9245	1.54206	1213.7240	1.54310	1219.5374
3/32	1.54105	1208.1055	1.54209	1213.9054	1.54313	1219.7192
⅛	1.54108	1208.2866	1.54212	1214.0869	1.54316	1219.9012
5/32	1.54112	1208.4676	1.54216	1214.2684	1.54319	1220.0831
3/16	1.54115	1208.6487	1.54219	1214.4499	1.54323	1220.2650
7/32	1.54118	1208.8298	1.54222	1214.6314	1.54326	1220.4469
¼	1.54122	1209.0109	1.54225	1214.8129	1.54329	1220.6289
9/32	1.54125	1209.1920	1.54229	1214.9945	1.54332	1220.8109
5/16	1.54128	1209.3731	1.54232	1215.1760	1.54336	1220.9929
11/32	1.54131	1209.5542	1.54235	1215.3576	1.54339	1221.1749
⅜	1.54135	1209.7354	1.54238	1215.5392	1.54342	1221.3569
13/32	1.54138	1209.9165	1.54242	1215.7208	1.54345	1221.5389
7/16	1.54141	1210.0977	1.54245	1215.9024	1.54349	1221.7209
15/32	1.54144	1210.2789	1.54248	1216.0840	1.54352	1221.9030
½	1.54148	1210.4601	1.54251	1216.2656	1.54355	1222.0851
17/32	1.54151	1210.6413	1.54255	1216.4473	1.54358	1222.2672
9/16	1.54154	1210.8225	1.54258	1216.6289	1.54362	1222.4492
19/32	1.54157	1211.0038	1.54261	1216.8106	1.54365	1222.6314
⅝	1.54161	1211.1850	1.54264	1216.9923	1.54368	1222.8135
21/32	1.54164	1211.3663	1.54268	1217.1740	1.54371	1222.9956
11/16	1.54167	1211.5476	1.54271	1217.3557	1.54374	1223.1778
23/32	1.54170	1211.7288	1.54274	1217.5374	1.54378	1223.3599
¾	1.54174	1211.9102	1.54277	1217.7192	1.54381	1223.5421
25/32	1.54177	1212.0915	1.54281	1217.9009	1.54384	1223.7243
13/16	1.54180	1212.2728	1.54284	1218.0827	1.54387	1223.9065
27/32	1.54183	1212.4542	1.54287	1218.2645	1.54391	1224.0887
⅞	1.54187	1212.6355	1.54290	1218.4463	1.54394	1224.2709
29/32	1.54190	1212.8169	1.54294	1218.6281	1.54397	1224.4532
15/16	1.54193	1212.9983	1.54297	1218.8099	1.54400	1224.6354
31/32	1.54196	1213.1797	1.54300	1218.9918	1.54404	1224.8177
1	1.54200	1213.3611	1.54303	1219.1736	1.54407	1225.0000

35′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.54407	1225.0000	1.54510	1230.8403	1.54613	1236.6944
1/32	1.54410	1225.1823	1.54513	1231.0230	1.54616	1236.8776
1/16	1.54413	1225.3646	1.54517	1231.2058	1.54620	1237.0608
3/32	1.54416	1225.5469	1.54520	1231.3885	1.54623	1237.2440
1/8	1.54420	1225.7293	1.54523	1231.5713	1.54626	1237.4272
5/32	1.54423	1225.9116	1.54526	1231.7541	1.54629	1237.6104
3/16	1.54426	1226.0940	1.54529	1231.9369	1.54632	1237.7936
7/32	1.54429	1226.2764	1.54533	1232.1197	1.54636	1237.9769
1/4	1.54433	1226.4588	1.54536	1232.3025	1.54639	1238.1602
9/32	1.54436	1226.6412	1.54539	1232.4854	1.54642	1238.3434
5/16	1.54439	1226.8236	1.54542	1232.6682	1.54645	1238.5267
11/32	1.54442	1227.0060	1.54546	1232.8511	1.54648	1238.7100
3/8	1.54446	1227.1885	1.54549	1233.0340	1.54652	1238.8933
13/32	1.54449	1227.3709	1.54552	1233.2169	1.54655	1239.0767
7/16	1.54452	1227.5534	1.54555	1233.3998	1.54658	1239.2600
15/32	1.54455	1227.7359	1.54558	1233.5827	1.54661	1239.4434
1/2	1.54458	1227.9184	1.54562	1233.7656	1.54665	1239.6267
17/32	1.54462	1228.1009	1.54565	1233.9486	1.54668	1239.8101
9/16	1.54465	1228.2834	1.54568	1234.1315	1.54671	1239.9935
19/32	1.54468	1228.4660	1.54571	1234.3145	1.54674	1240.1769
5/8	1.54471	1228.6485	1.54575	1234.4975	1.54677	1240.3604
21/32	1.54475	1228.8311	1.54578	1234.6805	1.54681	1240.5438
11/16	1.54478	1229.0137	1.54581	1234.8635	1.54684	1240.7272
23/32	1.54481	1229.1963	1.54584	1235.0466	1.54687	1240.9107
3/4	1.54484	1229.3789	1.54587	1235.2296	1.54690	1241.0942
25/32	1.54488	1229.5615	1.54591	1235.4127	1.54693	1241.2777
13/16	1.54491	1229.7442	1.54594	1235.5957	1.54697	1241.4612
27/32	1.54494	1229.9268	1.54597	1235.7788	1.54700	1241.6447
7/8	1.54497	1230.1095	1.54600	1235.9619	1.54703	1241.8282
29/32	1.54500	1230.2922	1.54603	1236.1450	1.54706	1242.0118
15/16	1.54504	1230.4749	1.54607	1236.3282	1.54709	1242.1953
31/32	1.54507	1230.6576	1.54610	1236.5113	1.54713	1242.3789
1	1.54510	1230.8403	1.54613	1236.6944	1.54716	1242.5625

35′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.54716	1242.5625	1.54818	1248.4444	1.54921	1254.3403
1/32	1.54719	1242.7461	1.54822	1248.6285	1.54924	1254.5247
1/16	1.54722	1242.9297	1.54825	1248.8125	1.54927	1254.7092
3/32	1.54726	1243.1133	1.54828	1248.9966	1.54930	1254.8937
1/8	1.54729	1243.2970	1.54831	1249.1807	1.54934	1255.0782
5/32	1.54732	1243.4806	1.54834	1249.3648	1.54937	1255.2628
3/16	1.54735	1243.6643	1.54838	1249.5489	1.54940	1255.4473
7/32	1.54738	1243.8480	1.54841	1249.7330	1.54943	1255.6318
1/4	1.54742	1244.0317	1.54844	1249.9171	1.54946	1255.8164
9/32	1.54745	1244.2154	1.54847	1250.1012	1.54949	1256.0010
5/16	1.54748	1244.3991	1.54850	1250.2854	1.54953	1256.1856
11/32	1.54751	1244.5829	1.54854	1250.4696	1.54956	1256.3702
3/8	1.54754	1244.7666	1.54857	1250.6538	1.54959	1256.5548
13/32	1.54758	1244.9504	1.54860	1250.8380	1.54962	1256.7394
7/16	1.54761	1245.1341	1.54863	1251.0222	1.54965	1256.9241
15/32	1.54764	1245.3179	1.54866	1251.2064	1.54969	1257.1087
1/2	1.54767	1245.5017	1.54870	1251.3906	1.54972	1257.2934
17/32	1.54770	1245.6856	1.54873	1251.5749	1.54975	1257.4781
9/16	1.54774	1245.8694	1.54876	1251.7591	1.54978	1257.6628
19/32	1.54777	1246.0532	1.54879	1251.9434	1.54981	1257.8475
5/8	1.54780	1246.2371	1.54882	1252.1277	1.54985	1258.0322
21/32	1.54783	1246.4210	1.54886	1252.3120	1.54988	1258.2170
11/16	1.54786	1246.6048	1.54889	1252.4963	1.54991	1258.4017
23/32	1.54790	1246.7887	1.54892	1252.6807	1.54994	1258.5865
3/4	1.54793	1246.9727	1.54895	1252.8650	1.54997	1258.7713
25/32	1.54796	1247.1566	1.54898	1253.0494	1.55001	1258.9561
13/16	1.54799	1247.3405	1.54902	1253.2338	1.55004	1259.1409
27/32	1.54802	1247.5245	1.54905	1253.4181	1.55007	1259.3257
7/8	1.54806	1247.7084	1.54908	1253.6025	1.55010	1259.5105
29/32	1.54809	1247.8924	1.54911	1253.7870	1.55013	1259.6954
15/16	1.54812	1248.0764	1.54914	1253.9714	1.55016	1259.8802
31/32	1.54815	1248.2604	1.54918	1254.1558	1.55020	1260.0651
1	1.54818	1248.4444	1.54921	1254.3403	1.55023	1260.2500

35′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.55023	1260.2500	1.55125	1266.1736	1.55226	1272.1111
1/32	1.55026	1260.4349	1.55128	1266.3589	1.55229	1272.2969
1/16	1.55029	1260.6198	1.55131	1266.5443	1.55233	1272.4827
3/32	1.55032	1260.8047	1.55134	1266.7297	1.55236	1272.6685
1/8	1.55036	1260.9897	1.55137	1266.9150	1.55239	1272.8543
5/32	1.55039	1261.1746	1.55141	1267.1004	1.55242	1273.0401
3/16	1.55042	1261.3596	1.55144	1267.2858	1.55245	1273.2259
7/32	1.55045	1261.5446	1.55147	1267.4713	1.55248	1273.4118
1/4	1.55048	1261.7296	1.55150	1267.6567	1.55252	1273.5977
9/32	1.55051	1261.9146	1.55153	1267.8421	1.55255	1273.7835
5/16	1.55055	1262.0996	1.55156	1268.0276	1.55258	1273.9694
11/32	1.55058	1262.2847	1.55160	1268.2131	1.55261	1274.1553
3/8	1.55061	1262.4697	1.55163	1268.3985	1.55264	1274.3413
13/32	1.55064	1262.6548	1.55166	1268.5840	1.55267	1274.5272
7/16	1.55067	1262.8399	1.55169	1268.7696	1.55271	1274.7131
15/32	1.55071	1263.0250	1.55172	1268.9551	1.55274	1274.8991
1/2	1.55074	1263.2101	1.55175	1269.1406	1.55277	1275.0851
17/32	1.55077	1263.3952	1.55179	1269.3262	1.55280	1275.2711
9/16	1.55080	1263.5803	1.55182	1269.5117	1.55283	1275.4571
19/32	1.55083	1263.7655	1.55185	1269.6973	1.55286	1275.6431
5/8	1.55087	1263.9506	1.55188	1269.8829	1.55290	1275.8291
21/32	1.55090	1264.1358	1.55191	1270.0685	1.55293	1276.0151
11/16	1.55093	1264.3210	1.55195	1270.2542	1.55296	1276.2012
23/32	1.55096	1264.5062	1.55198	1270.4398	1.55299	1276.3873
3/4	1.55099	1264.6914	1.55201	1270.6254	1.55302	1276.5734
25/32	1.55102	1264.8766	1.55204	1270.8111	1.55305	1276.7594
13/16	1.55106	1265.0619	1.55207	1270.9968	1.55309	1276.9456
27/32	1.55109	1265.2471	1.55210	1271.1825	1.55312	1277.1317
7/8	1.55112	1265.4324	1.55214	1271.3682	1.55315	1277.3178
29/32	1.55115	1265.6177	1.55217	1271.5539	1.55318	1277.5040
15/16	1.55118	1265.8030	1.55220	1271.7396	1.55321	1277.6901
31/32	1.55121	1265.9883	1.55223	1271.9254	1.55324	1277.8763
1	1.55125	1266.1736	1.55226	1272.1111	1.55328	1278.0625

35′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.55328	1278.0625	1.55429	1284.0278	1.55530	1290.0069
1/32	1.55331	1278.2487	1.55432	1284.2144	1.55533	1290.1940
1/16	1.55334	1278.4349	1.55435	1284.4011	1.55536	1290.3811
3/32	1.55337	1278.6212	1.55438	1284.5877	1.55539	1290.5682
1/8	1.55340	1278.8074	1.55441	1284.7744	1.55542	1290.7553
5/32	1.55343	1278.9937	1.55444	1284.9611	1.55545	1290.9424
3/16	1.55347	1279.1799	1.55448	1285.1478	1.55548	1291.1296
7/32	1.55350	1279.3662	1.55451	1285.3345	1.55552	1291.3167
1/4	1.55353	1279.5525	1.55454	1285.5213	1.55555	1291.5039
9/32	1.55356	1279.7388	1.55457	1285.7080	1.55558	1291.6911
5/16	1.55359	1279.9252	1.55460	1285.8948	1.55561	1291.8783
11/32	1.55362	1280.1115	1.55463	1286.0815	1.55564	1292.0655
3/8	1.55366	1280.2979	1.55467	1286.2683	1.55567	1292.2527
13/32	1.55369	1280.4842	1.55470	1286.4551	1.55571	1292.4399
7/16	1.55372	1280.6706	1.55473	1286.6420	1.55574	1292.6272
15/32	1.55375	1280.8570	1.55476	1286.8288	1.55577	1292.8145
1/2	1.55378	1281.0434	1.55479	1287.0156	1.55580	1293.0017
17/32	1.55381	1281.2298	1.55482	1287.2025	1.55583	1293.1890
9/16	1.55385	1281.4163	1.55485	1287.3894	1.55586	1293.3763
19/32	1.55388	1281.6027	1.55489	1287.5762	1.55589	1293.5636
5/8	1.55391	1281.7892	1.55492	1287.7631	1.55593	1293.7510
21/32	1.55394	1281.9756	1.55495	1287.9500	1.55596	1293.9383
11/16	1.55397	1282.1621	1.55498	1288.1370	1.55599	1294.1257
23/32	1.55400	1282.3486	1.55501	1288.3239	1.55602	1294.3130
3/4	1.55403	1282.5352	1.55504	1288.5109	1.55605	1294.5004
25/32	1.55407	1282.7217	1.55508	1288.6978	1.55608	1294.6878
13/16	1.55410	1282.9082	1.55511	1288.8848	1.55611	1294.8752
27/32	1.55413	1283.0948	1.55514	1289.0718	1.55615	1295.0627
7/8	1.55416	1283.2814	1.55517	1289.2588	1.55618	1295.2501
29/32	1.55419	1283.4679	1.55520	1289.4458	1.55621	1295.4376
15/16	1.55422	1283.6545	1.55523	1289.6328	1.55624	1295.6250
31/32	1.55426	1283.8412	1.55526	1289.8199	1.55627	1295.8125
1	1.55429	1284.0278	1.55530	1290.0069	1.55630	1296.0000

36′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.55630	1296.0000	1.55731	1302.0069	1.55831	1308.0278
1/32	1.55633	1296.1875	1.55734	1302.1949	1.55834	1308.2162
1/16	1.55637	1296.3750	1.55737	1302.3828	1.55837	1308.4045
3/32	1.55640	1296.5626	1.55740	1302.5708	1.55840	1308.5929
1/8	1.55643	1296.7501	1.55743	1302.7588	1.55843	1308.7814
5/32	1.55646	1296.9377	1.55746	1302.9468	1.55846	1308.9698
3/16	1.55649	1297.1252	1.55749	1303.1348	1.55850	1309.1582
7/32	1.55652	1297.3128	1.55753	1303.3228	1.55853	1309.3467
1/4	1.55655	1297.5004	1.55756	1303.5109	1.55856	1309.5352
9/32	1.55659	1297.6880	1.55759	1303.6989	1.55859	1309.7236
5/16	1.55662	1297.8757	1.55762	1303.8870	1.55862	1309.9121
11/32	1.55665	1298.0633	1.55765	1304.0750	1.55865	1310.1006
3/8	1.55668	1298.2510	1.55768	1304.2631	1.55868	1310.2892
13/32	1.55671	1298.4386	1.55771	1304.4512	1.55871	1310.4777
7/16	1.55674	1298.6263	1.55775	1304.6393	1.55875	1310.6663
15/32	1.55677	1298.8140	1.55778	1304.8275	1.55878	1310.8548
1/2	1.55680	1299.0017	1.55781	1305.0156	1.55881	1311.0434
17/32	1.55684	1299.1895	1.55784	1305.2038	1.55884	1311.2320
9/16	1.55687	1299.3772	1.55787	1305.3920	1.55887	1311.4206
19/32	1.55690	1299.5649	1.55790	1305.5801	1.55890	1311.6092
5/8	1.55693	1299.7527	1.55793	1305.7683	1.55893	1311.7979
21/32	1.55696	1299.9405	1.55796	1305.9565	1.55896	1311.9865
11/16	1.55699	1300.1283	1.55800	1306.1448	1.55900	1312.1752
23/32	1.55702	1300.3161	1.55803	1306.3330	1.55903	1312.3638
3/4	1.55706	1300.5039	1.55806	1306.5213	1.55906	1312.5525
25/32	1.55709	1300.6917	1.55809	1306.7095	1.55909	1312.7412
13/16	1.55712	1300.8796	1.55812	1306.8978	1.55912	1312.9299
27/32	1.55715	1301.0674	1.55815	1307.0861	1.55915	1313.1187
7/8	1.55718	1301.2553	1.55818	1307.2744	1.55918	1313.3074
29/32	1.55721	1301.4432	1.55821	1307.4627	1.55921	1313.4962
15/16	1.55724	1301.6311	1.55825	1307.6511	1.55925	1313.6849
31/32	1.55728	1301.8190	1.55828	1307.8394	1.55928	1313.8737
1	1.55731	1302.0069	1.55831	1308.0278	1.55931	1314.0625

36′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.55931	1314.0625	1.56031	1320.1111	1.56130	1326.1736
1/32	1.55934	1314.2513	1.56034	1320.3004	1.56133	1326.3633
1/16	1.55937	1314.4401	1.56037	1320.4896	1.56136	1326.5530
3/32	1.55940	1314.6290	1.56040	1320.6789	1.56139	1326.7427
⅛	1.55943	1314.8178	1.56043	1320.8682	1.56142	1326.9324
5/32	1.55946	1315.0067	1.56046	1321.0575	1.56146	1327.1221
3/16	1.55950	1315.1956	1.56049	1321.2468	1.56149	1327.3119
7/32	1.55953	1315.3844	1.56052	1321.4361	1.56152	1327.5016
¼	1.55956	1315.5734	1.56055	1321.6254	1.56155	1327.6914
9/32	1.55959	1315.7623	1.56059	1321.8148	1.56158	1327.8812
5/16	1.55962	1315.9512	1.56062	1322.0042	1.56161	1328.0710
11/32	1.55965	1316.1401	1.56065	1322.1935	1.56164	1328.2608
⅜	1.55968	1316.3291	1.56068	1322.3829	1.56167	1328.4506
13/32	1.55971	1316.5181	1.56071	1322.5723	1.56170	1328.6405
7/16	1.55974	1316.7071	1.56074	1322.7617	1.56173	1328.8303
15/32	1.55978	1316.8961	1.56077	1322.9512	1.56177	1329.0202
½	1.55981	1317.0851	1.56080	1323.1406	1.56180	1329.2101
17/32	1.55984	1317.2741	1.56083	1323.3301	1.56183	1329.4000
9/16	1.55987	1317.4631	1.56087	1323.5196	1.56186	1329.5899
19/32	1.55990	1317.6522	1.56090	1323.7090	1.56189	1329.7798
⅝	1.55993	1317.8413	1.56093	1323.8985	1.56192	1329.9697
21/32	1.55996	1318.0303	1.56096	1324.0881	1.56195	1330.1597
11/16	1.55999	1318.2194	1.56099	1324.2776	1.56198	1330.3496
23/32	1.56003	1318.4085	1.56102	1324.4671	1.56201	1330.5396
¾	1.56006	1318.5977	1.56105	1324.6567	1.56204	1330.7296
25/32	1.56009	1318.7868	1.56108	1324.8463	1.56208	1330.9196
13/16	1.56012	1318.9759	1.56111	1325.0358	1.56211	1331.1096
27/32	1.56015	1319.1651	1.56114	1325.2254	1.56214	1331.2996
⅞	1.56018	1319.3543	1.56118	1325.4150	1.56217	1331.4897
29/32	1.56021	1319.5435	1.56121	1325.6047	1.56220	1331.6797
15/16	1.56024	1319.7327	1.56124	1325.7943	1.56223	1331.8698
31/32	1.56027	1319.9219	1.56127	1325.9839	1.56226	1332.0599
1	1.56031	1320.1111	1.56130	1326.1736	1.56229	1332.2500

36′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.56229	1332.2500	1.56328	1338.3403	1.56427	1344.4444
1/32	1.56232	1332.4401	1.56331	1338.5308	1.56430	1344.6354
1/16	1.56235	1332.6302	1.56335	1338.7214	1.56433	1344.8264
3/32	1.56239	1332.8204	1.56338	1338.9120	1.56436	1345.0174
1/8	1.56242	1333.0105	1.56341	1339.1025	1.56439	1345.2084
5/32	1.56245	1333.2007	1.56344	1339.2931	1.56443	1345.3995
3/16	1.56248	1333.3909	1.56347	1339.4838	1.56446	1345.5905
7/32	1.56251	1333.5811	1.56350	1339.6744	1.56449	1345.7816
1/4	1.56254	1333.7713	1.56353	1339.8650	1.56452	1345.9727
9/32	1.56257	1333.9615	1.56356	1340.0557	1.56455	1346.1637
5/16	1.56260	1334.1517	1.56359	1340.2463	1.56458	1346.3548
11/32	1.56263	1334.3420	1.56362	1340.4370	1.56461	1346.5460
3/8	1.56266	1334.5322	1.56365	1340.6277	1.56464	1346.7371
13/32	1.56270	1334.7225	1.56368	1340.8184	1.56467	1346.9282
7/16	1.56273	1334.9128	1.56372	1341.0091	1.56470	1347.1194
15/32	1.56276	1335.1031	1.56375	1341.1999	1.56473	1347.3106
1/2	1.56279	1335.2934	1.56378	1341.3906	1.56476	1347.5017
17/32	1.56282	1335.4837	1.56381	1341.5814	1.56480	1347.6929
9/16	1.56285	1335.6741	1.56384	1341.7722	1.56483	1347.8841
19/32	1.56288	1335.8644	1.56387	1341.9630	1.56486	1348.0754
5/8	1.56291	1336.0548	1.56390	1342.1538	1.56489	1348.2666
21/32	1.56294	1336.2452	1.56393	1342.3446	1.56492	1348.4579
11/16	1.56297	1336.4356	1.56396	1342.5354	1.56495	1348.6491
23/32	1.56300	1336.6260	1.56399	1342.7262	1.56498	1348.8404
3/4	1.56304	1336.8164	1.56402	1342.9171	1.56501	1349.0317
25/32	1.56307	1337.0068	1.56406	1343.1080	1.56504	1349.2230
13/16	1.56310	1337.1973	1.56409	1343.2989	1.56507	1349.4143
27/32	1.56313	1337.3878	1.56412	1343.4898	1.56510	1349.6056
7/8	1.56316	1337.5782	1.56415	1343.6807	1.56513	1349.7970
29/32	1.56319	1337.7687	1.56418	1343.8716	1.56517	1349.9883
15/16	1.56322	1337.9592	1.56421	1344.0625	1.56520	1350.1797
31/32	1.56325	1338.1497	1.56424	1344.2535	1.56523	1350.3711
1	1.56328	1338.3403	1.56427	1344.4444	1.56526	1350.5625

36′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.56526	1350.5625	1.56624	1356.6944	1.56722	1362.8403
1/32	1.56529	1350.7539	1.56627	1356.8863	1.56725	1363.0326
1/16	1.56532	1350.9453	1.56630	1357.0782	1.56728	1363.2249
3/32	1.56535	1351.1368	1.56633	1357.2700	1.56731	1363.4172
1/8	1.56538	1351.3282	1.56636	1357.4619	1.56735	1363.6095
5/32	1.56541	1351.5197	1.56639	1357.6538	1.56738	1363.8018
3/16	1.56544	1351.7112	1.56643	1357.8457	1.56741	1363.9942
7/32	1.56547	1351.9027	1.56646	1358.0377	1.56744	1364.1865
1/4	1.56550	1352.0942	1.56649	1358.2296	1.56747	1364.3789
9/32	1.56553	1352.2857	1.56652	1358.4216	1.56750	1364.5713
5/16	1.56556	1352.4772	1.56655	1358.6135	1.56753	1364.7637
11/32	1.56560	1352.6688	1.56658	1358.8055	1.56756	1364.9561
3/8	1.56563	1352.8604	1.56661	1358.9975	1.56759	1365.1485
13/32	1.56566	1353.0519	1.56664	1359.1895	1.56762	1365.3410
7/16	1.56569	1353.2435	1.56667	1359.3815	1.56765	1365.5334
15/32	1.56572	1353.4351	1.56670	1359.5736	1.56768	1365.7259
1/2	1.56575	1353.6267	1.56673	1359.7656	1.56771	1365.9184
17/32	1.56578	1353.8184	1.56676	1359.9577	1.56774	1366.1109
9/16	1.56581	1354.0100	1.56679	1360.1498	1.56777	1366.3034
19/32	1.56584	1354.2017	1.56682	1360.3419	1.56780	1366.4959
5/8	1.56587	1354.3933	1.56685	1360.5340	1.56783	1366.6885
21/32	1.56590	1354.5850	1.56689	1360.7261	1.56787	1366.8810
11/16	1.56593	1354.7767	1.56692	1360.9182	1.56790	1367.0736
23/32	1.56596	1354.9684	1.56695	1361.1104	1.56793	1367.2662
3/4	1.56600	1355.1602	1.56698	1361.3025	1.56796	1367.4588
25/32	1.56603	1355.3519	1.56701	1361.4947	1.56799	1367.6514
13/16	1.56606	1355.5436	1.56704	1361.6869	1.56802	1367.8440
27/32	1.56609	1355.7354	1.56707	1361.8791	1.56805	1368.0366
7/8	1.56612	1355.9272	1.56710	1362.0713	1.56808	1368.2293
29/32	1.56615	1356.1190	1.56713	1362.2635	1.56811	1368.4219
15/16	1.56618	1356.3108	1.56716	1362.4558	1.56814	1368.6146
31/32	1.56621	1356.5026	1.56719	1362.6480	1.56817	1368.8073
1	1.56624	1356.6944	1.56722	1362.8403	1.56820	1369.0000

37′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.56820	1369.0000	1.56918	1375.1736	1.57015	1381.3611
1/32	1.56823	1369.1927	1.56921	1375.3668	1.57018	1381.5547
1/16	1.56826	1369.3854	1.56924	1375.5599	1.57021	1381.7483
3/32	1.56829	1369.5782	1.56927	1375.7531	1.57024	1381.9419
1/8	1.56832	1369.7709	1.56930	1375.9463	1.57028	1382.1355
5/32	1.56835	1369.9637	1.56933	1376.1395	1.57031	1382.3292
3/16	1.56839	1370.1565	1.56936	1376.3327	1.57034	1382.5228
7/32	1.56842	1370.3493	1.56939	1376.5259	1.57037	1382.7165
1/4	1.56845	1370.5421	1.56942	1376.7192	1.57040	1382.9102
9/32	1.56848	1370.7349	1.56945	1376.9124	1.57043	1383.1038
5/16	1.56851	1370.9278	1.56948	1377.1057	1.57046	1383.2976
11/32	1.56854	1371.1206	1.56951	1377.2990	1.57049	1383.4913
3/8	1.56857	1371.3135	1.56954	1377.4923	1.57052	1383.6850
13/32	1.56860	1371.5064	1.56958	1377.6856	1.57055	1383.8788
7/16	1.56863	1371.6992	1.56961	1377.8789	1.57058	1384.0725
15/32	1.56866	1371.8922	1.56964	1378.0723	1.57061	1384.2663
1/2	1.56869	1372.0851	1.56967	1378.2656	1.57064	1384.4601
17/32	1.56872	1372.2780	1.56970	1378.4590	1.57067	1384.6539
9/16	1.56875	1372.4709	1.56973	1378.6524	1.57070	1384.8477
19/32	1.56878	1372.6639	1.56976	1378.8458	1.57073	1385.0415
5/8	1.56881	1372.8569	1.56979	1379.0392	1.57076	1385.2354
21/32	1.56884	1373.0499	1.56982	1379.2326	1.57079	1385.4292
11/16	1.56887	1373.2429	1.56985	1379.4260	1.57082	1385.6231
23/32	1.56890	1373.4359	1.56988	1379.6195	1.57085	1385.8170
3/4	1.56893	1373.6289	1.56991	1379.8129	1.57088	1386.0109
25/32	1.56897	1373.8219	1.56994	1380.0064	1.57091	1386.2048
13/16	1.56900	1374.0150	1.56997	1380.1999	1.57094	1386.3987
27/32	1.56903	1374.2081	1.57000	1380.3934	1.57097	1386.5926
7/8	1.56906	1374.4011	1.57003	1380.5869	1.57100	1386.7866
29/32	1.56909	1374.5942	1.57006	1380.7804	1.57104	1386.9805
15/16	1.56912	1374.7874	1.57009	1380.9740	1.57107	1387.1745
31/32	1.56915	1374.9805	1.57012	1381.1675	1.57110	1387.3685
1	1.56918	1375.1736	1.57015	1381.3611	1.57113	1387.5625

37′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.57113	1387.5625	1.57210	1393.7778	1.57307	1400.0069
1/32	1.57116	1387.7565	1.57213	1393.9722	1.57310	1400.2018
1/16	1.57119	1387.9505	1.57216	1394.1667	1.57313	1400.3967
3/32	1.57122	1388.1446	1.57219	1394.3612	1.57316	1400.5916
1/8	1.57125	1388.3387	1.57222	1394.5557	1.57319	1400.7866
5/32	1.57128	1388.5327	1.57225	1394.7502	1.57322	1400.9815
3/16	1.57131	1388.7268	1.57228	1394.9447	1.57325	1401.1765
7/32	1.57134	1388.9209	1.57231	1395.1392	1.57328	1401.3714
1/4	1.57137	1389.1150	1.57234	1395.3338	1.57331	1401.5664
9/32	1.57140	1389.3091	1.57237	1395.5283	1.57334	1401.7614
5/16	1.57143	1389.5033	1.57240	1395.7229	1.57337	1401.9564
11/32	1.57146	1389.6974	1.57243	1395.9175	1.57340	1402.1514
3/8	1.57149	1389.8916	1.57246	1396.1121	1.57343	1402.3465
13/32	1.57152	1390.0858	1.57249	1396.3067	1.57346	1402.5415
7/16	1.57155	1390.2800	1.57252	1396.5013	1.57349	1402.7366
15/32	1.57158	1390.4742	1.57255	1396.6960	1.57352	1402.9316
1/2	1.57161	1390.6684	1.57258	1396.8906	1.57355	1403.1267
17/32	1.57164	1390.8626	1.57261	1397.0853	1.57358	1403.3218
9/16	1.57167	1391.0569	1.57264	1397.2800	1.57361	1403.5170
19/32	1.57170	1391.2511	1.57267	1397.4747	1.57364	1403.7121
5/8	1.57173	1391.4454	1.57270	1397.6694	1.57367	1403.9072
21/32	1.57176	1391.6397	1.57273	1397.8641	1.57370	1404.1024
11/16	1.57179	1391.8340	1.57276	1398.0588	1.57373	1404.2976
23/32	1.57182	1392.0283	1.57279	1398.2536	1.57376	1404.4927
3/4	1.57185	1392.2227	1.57282	1398.4484	1.57379	1404.6879
25/32	1.57188	1392.4170	1.57285	1398.6431	1.57382	1404.8831
13/16	1.57191	1392.6114	1.57288	1398.8379	1.57385	1405.0784
27/32	1.57195	1392.8057	1.57291	1399.0327	1.57388	1405.2736
7/8	1.57198	1393.0001	1.57294	1399.2275	1.57391	1405.4689
29/32	1.57201	1393.1945	1.57297	1399.4224	1.57394	1405.6641
15/16	1.57204	1393.3889	1.57300	1399.6172	1.57397	1405.8594
31/32	1.57207	1393.5833	1.57303	1399.8121	1.57400	1406.0547
1	1.57210	1393.7778	1.57307	1400.0069	1.57403	1406.2500

37′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.57403	1406.2500	1.57500	1412.5069	1.57596	1418.7778
1/32	1.57406	1406.4453	1.57503	1412.7027	1.57599	1418.9740
1/16	1.57409	1406.6407	1.57506	1412.8985	1.57602	1419.1702
3/32	1.57412	1406.8360	1.57509	1413.0942	1.57605	1419.3664
1/8	1.57415	1407.0314	1.57512	1413.2900	1.57608	1419.5626
5/32	1.57418	1407.2267	1.57515	1413.4858	1.57611	1419.7589
3/16	1.57421	1407.4221	1.57518	1413.6817	1.57614	1419.9551
7/32	1.57424	1407.6175	1.57521	1413.8775	1.57617	1420.1514
1/4	1.57427	1407.8129	1.57524	1414.0734	1.57620	1420.3477
9/32	1.57430	1408.0084	1.57527	1414.2692	1.57623	1420.5440
5/16	1.57433	1408.2038	1.57530	1414.4651	1.57626	1420.7403
11/32	1.57436	1408.3993	1.57533	1414.6610	1.57629	1420.9366
3/8	1.57439	1408.5947	1.57536	1414.8569	1.57632	1421.1329
13/32	1.57442	1408.7902	1.57539	1415.0528	1.57635	1421.3293
7/16	1.57445	1408.9857	1.57542	1415.2487	1.57638	1421.5256
15/32	1.57448	1409.1812	1.57545	1415.4447	1.57641	1421.7220
1/2	1.57451	1409.3767	1.57548	1415.6406	1.57644	1421.9184
17/32	1.57454	1409.5723	1.57551	1415.8366	1.57647	1422.1148
9/16	1.57457	1409.7678	1.57554	1416.0326	1.57650	1422.3112
19/32	1.57460	1409.9634	1.57557	1416.2286	1.57653	1422.5077
5/8	1.57463	1410.1590	1.57560	1416.4246	1.57656	1422.7041
21/32	1.57466	1410.3546	1.57563	1416.6206	1.57659	1422.9006
11/16	1.57469	1410.5502	1.57566	1416.8167	1.57662	1423.0970
23/32	1.57472	1410.7458	1.57569	1417.0127	1.57665	1423.2935
3/4	1.57475	1410.9414	1.57572	1417.2088	1.57668	1423.4900
25/32	1.57478	1411.1371	1.57575	1417.4048	1.57671	1423.6865
13/16	1.57481	1411.3327	1.57578	1417.6009	1.57674	1423.8831
27/32	1.57484	1411.5284	1.57581	1417.7970	1.57677	1424.0796
7/8	1.57487	1411.7241	1.57584	1417.9932	1.57680	1424.2762
29/32	1.57491	1411.9198	1.57587	1418.1893	1.57683	1424.4727
15/16	1.57494	1412.1155	1.57590	1418.3854	1.57686	1424.6693
31/32	1.57497	1412.3112	1.57593	1418.5816	1.57689	1424.8659
1	1.57500	1412.5069	1.57596	1418.7778	1.57692	1425.0625

37′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.57692	1425.0625	1.57787	1431.3611	1.57883	1437.6736
1/32	1.57695	1425.2591	1.57790	1431.5582	1.57886	1437.8711
1/16	1.57698	1425.4558	1.57793	1431.7552	1.57889	1438.0686
3/32	1.57701	1425.6524	1.57796	1431.9523	1.57892	1438.2661
⅛	1.57704	1425.8491	1.57799	1432.1494	1.57895	1438.4637
5/32	1.57707	1426.0457	1.57802	1432.3465	1.57898	1438.6612
3/16	1.57710	1426.2424	1.57805	1432.5436	1.57901	1438.8588
7/32	1.57713	1426.4391	1.57808	1432.7408	1.57904	1439.0563
¼	1.57716	1426.6359	1.57811	1432.9379	1.57907	1439.2539
9/32	1.57719	1426.8326	1.57814	1433.1351	1.57910	1439.4515
5/16	1.57722	1427.0293	1.57817	1433.3323	1.57913	1439.6491
11/32	1.57725	1427.2261	1.57820	1433.5295	1.57916	1439.8467
⅜	1.57728	1427.4229	1.57823	1433.7267	1.57919	1440.0444
13/32	1.57731	1427.6196	1.57826	1433.9239	1.57922	1440.2420
7/16	1.57734	1427.8164	1.57829	1434.1211	1.57925	1440.4397
15/32	1.57737	1428.0132	1.57832	1434.3184	1.57928	1440.6374
½	1.57740	1428.2101	1.57835	1434.5156	1.57931	1440.8351
17/32	1.57743	1428.4069	1.57838	1434.7129	1.57934	1441.0328
9/16	1.57746	1428.6038	1.57841	1434.9102	1.57937	1441.2305
19/32	1.57749	1428.8006	1.57844	1435.1075	1.57940	1441.4282
⅝	1.57752	1428.9975	1.57847	1435.3048	1.57943	1441.6260
21/32	1.57755	1429.1944	1.57850	1435.5021	1.57946	1441.8237
11/16	1.57758	1429.3913	1.57853	1435.6995	1.57949	1442.0215
23/32	1.57761	1429.5882	1.57856	1435.8968	1.57952	1442.2193
¾	1.57764	1429.7852	1.57859	1436.0942	1.57955	1442.4171
25/32	1.57767	1429.9821	1.57862	1436.2916	1.57958	1442.6149
13/16	1.57770	1430.1791	1.57865	1436.4890	1.57960	1442.8127
27/32	1.57773	1430.3760	1.57868	1436.6864	1.57963	1443.0106
⅞	1.57776	1430.5730	1.57871	1436.8838	1.57966	1443.2084
29/32	1.57778	1430.7700	1.57874	1437.0812	1.57969	1443.4063
15/16	1.57781	1430.9670	1.57877	1437.2787	1.57972	1443.6042
31/32	1.57784	1431.1641	1.57880	1437.4761	1.57975	1443.8021
1	1.57787	1431.3611	1.57883	1437.6736	1.57978	1444.0000

38′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.57978	1444.0000	1.58073	1450.3403	1.58168	1456.6944
1/32	1.57981	1444.1979	1.58076	1450.5386	1.58171	1456.8932
1/16	1.57984	1444.3959	1.58079	1450.7370	1.58174	1457.0920
3/32	1.57987	1444.5938	1.58082	1450.9354	1.58177	1457.2909
1/8	1.57990	1444.7918	1.58085	1451.1338	1.58180	1457.4897
5/32	1.57993	1444.9898	1.58088	1451.3322	1.58183	1457.6885
3/16	1.57996	1445.1877	1.58091	1451.5306	1.58186	1457.8874
7/32	1.57999	1445.3857	1.58094	1451.7291	1.58189	1458.0863
1/4	1.58002	1445.5838	1.58097	1451.9275	1.58192	1458.2852
9/32	1.58005	1445.7818	1.58100	1452.1260	1.58195	1458.4841
5/16	1.58008	1445.9798	1.58103	1452.3245	1.58198	1458.6830
11/32	1.58011	1446.1779	1.58106	1452.5230	1.58201	1458.8819
3/8	1.58014	1446.3760	1.58109	1452.7215	1.58204	1459.0808
13/32	1.58017	1446.5741	1.58112	1452.9200	1.58207	1459.2798
7/16	1.58020	1446.7722	1.58115	1453.1185	1.58210	1459.4788
15/32	1.58023	1446.9703	1.58118	1453.3171	1.58213	1459.6777
1/2	1.58026	1447.1684	1.58121	1453.5156	1.58216	1459.8767
17/32	1.58029	1447.3665	1.58124	1453.7142	1.58219	1460.0757
9/16	1.58032	1447.5647	1.58127	1453.9128	1.58222	1460.2748
19/32	1.58035	1447.7629	1.58130	1454.1114	1.58225	1460.4738
5/8	1.58038	1447.9610	1.58133	1454.3100	1.58228	1460.6729
21/32	1.58041	1448.1592	1.58136	1454.5086	1.58231	1460.8719
11/16	1.58044	1448.3574	1.58139	1454.7073	1.58234	1461.0710
23/32	1.58047	1448.5557	1.58142	1454.9059	1.58237	1461.2701
3/4	1.58050	1448.7539	1.58145	1455.1046	1.58239	1461.4692
25/32	1.58053	1448.9522	1.58148	1455.3033	1.58242	1461.6683
13/16	1.58056	1449.1504	1.58151	1455.5020	1.58245	1461.8674
27/32	1.58059	1449.3487	1.58154	1455.7007	1.58248	1462.0666
7/8	1.58062	1449.5470	1.58157	1455.8994	1.58251	1462.2657
29/32	1.58065	1449.7453	1.58160	1456.0982	1.58254	1462.4649
15/16	1.58068	1449.9436	1.58162	1456.2969	1.58257	1462.6641
31/32	1.58071	1450.1419	1.58165	1456.4957	1.58260	1462.8633
1	1.58073	1450.3403	1.58168	1456.6944	1.58263	1463.0625

38′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square:
0	1.58263	1463.0625	1.58358	1469.4444	1.58452	1475.8403
1/32	1.58266	1463.2617	1.58361	1469.6441	1.58455	1476.0404
1/16	1.58269	1463.4610	1.58364	1469.8438	1.58458	1476.2405
3/32	1.58272	1463.6602	1.58367	1470.0435	1.58461	1476.4406
1/8	1.58275	1463.8595	1.58369	1470.2432	1.58464	1476.6407
5/32	1.58278	1464.0588	1.58372	1470.4429	1.58467	1476.8409
3/16	1.58281	1464.2581	1.58375	1470.6426	1.58470	1477.0410
7/32	1.58284	1464.4574	1.58378	1470.8423	1.58473	1477.2412
1/4	1.58287	1464.6567	1.58381	1471.0421	1.58476	1477.4414
9/32	1.58290	1464.8560	1.58384	1471.2419	1.58478	1477.6416
5/16	1.58293	1465.0554	1.58387	1471.4417	1.58481	1477.8418
11/32	1.58296	1465.2547	1.58390	1471.6414	1.58484	1478.0421
3/8	1.58299	1465.4541	1.58393	1471.8413	1.58487	1478.2423
13/32	1.58302	1465.6535	1.58396	1472.0411	1.58490	1478.4426
7/16	1.58305	1465.8529	1.58399	1472.2409	1.58493	1478.6428
15/32	1.58307	1466.0523	1.58402	1472.4408	1.58496	1478.8431
1/2	1.58310	1466.2517	1.58405	1472.6406	1.58499	1479.0434
17/32	1.58313	1466.4512	1.58408	1472.8405	1.58502	1479.2437
9/16	1.58316	1466.6506	1.58411	1473.0404	1.58505	1479.4440
19/32	1.58319	1466.8501	1.58414	1473.2403	1.58508	1479.6444
5/8	1.58322	1467.0496	1.58417	1473.4402	1.58511	1479.8447
21/32	1.58325	1467.2491	1.58420	1473.6401	1.58514	1480.0451
11/16	1.58328	1467.4486	1.58423	1473.8401	1.58517	1480.2455
23/32	1.58331	1467.6481	1.58425	1474.0400	1.58520	1480.4459
3/4	1.58334	1467.8477	1.58428	1474.2400	1.58523	1480.6463
25/32	1.58337	1468.0472	1.58431	1474.4400	1.58526	1480.8467
13/16	1.58340	1468.2468	1.58434	1474.6400	1.58528	1481.0471
27/32	1.58343	1468.4464	1.58437	1474.8400	1.58531	1481.2476
7/8	1.58346	1468.6459	1.58440	1475.0400	1.58534	1481.4480
29/32	1.58349	1468.8455	1.58443	1475.2401	1.58537	1481.6485
15/16	1.58352	1469.0452	1.58446	1475.4401	1.58540	1481.8490
31/32	1.58355	1469.2448	1.58449	1475.6402	1.58543	1482.0495
1	1.58358	1469.4444	1.58452	1475.8403	1.58546	1482.2500

38′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.58546	1482.2500	1.58640	1488.6736	1.58734	1495.1111
1/32	1.58549	1482.4505	1.58643	1488.8746	1.58737	1495.3125
1/16	1.58552	1482.6511	1.58646	1489.0755	1.58740	1495.5139
3/32	1.58555	1482.8516	1.58649	1489.2765	1.58742	1495.7153
1/8	1.58558	1483.0522	1.58652	1489.4775	1.58745	1495.9168
5/32	1.58561	1483.2528	1.58655	1489.6786	1.58748	1496.1182
3/16	1.58564	1483.4534	1.58658	1489.8796	1.58751	1496.3197
7/32	1.58567	1483.6540	1.58660	1490.0806	1.58754	1496.5212
1/4	1.58570	1483.8546	1.58663	1490.2817	1.58757	1496.7227
9/32	1.58573	1484.0552	1.58666	1490.4828	1.58760	1496.9242
5/16	1.58575	1484.2559	1.58669	1490.6838	1.58763	1497.1257
11/32	1.58578	1484.4565	1.58672	1490.8849	1.58766	1497.3272
3/8	1.58581	1484.6572	1.58675	1491.0860	1.58769	1497.5288
13/32	1.58584	1484.8579	1.58678	1491.2872	1.58772	1497.7303
7/16	1.58587	1485.0586	1.58681	1491.4883	1.58775	1497.9319
15/32	1.58590	1485.2593	1.58684	1491.6895	1.58778	1498.1335
1/2	1.58593	1485.4601	1.58687	1491.8906	1.58780	1498.3351
17/32	1.58596	1485.6608	1.58690	1492.0918	1.58783	1498.5367
9/16	1.58599	1485.8616	1.58693	1492.2930	1.58786	1498.7383
19/32	1.58602	1486.0623	1.58696	1492.4942	1.58789	1498.9399
5/8	1.58605	1486.2631	1.58699	1492.6954	1.58792	1499.1416
21/32	1 58608	1486.4639	1.58701	1492.8967	1.58795	1499.3433
11/16	1.58611	1486.6647	1.58704	1493.0979	1.58798	1499.5449
23/32	1.58614	1486.8656	1.58707	1493.2992	1.58801	1499.7466
3/4	1.58617	1487.0664	1.58710	1493.5004	1.58804	1499.9484
25/32	1.58619	1487.2673	1.58713	1493.7017	1.58807	1500.1501
13/16	1.58622	1487.4681	1.58716	1493.9030	1.58810	1500.3518
27/32	1.58625	1487.6690	1.58719	1494.1043	1.58813	1500.5536
7/8	1.58628	1487.8699	1.58722	1494.3057	1.58815	1500.7553
29/32	1.58631	1488.0708	1.58725	1494.5070	1.58818	1500.9571
15/16	1.58634	1488.2717	1.58728	1494.7084	1.58821	1501.1589
31/32	1.58637	1488.4727	1.58731	1494.9097	1.58824	1501.3607
1	1.58640	1488.6736	1.58734	1495.1111	1.58827	1501.5625

38'

Fractions of an Inch.	9"		10"		11"	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.58827	1501.5625	1.58920	1508.0278	1.59014	1514.5069
1/32	1.58830	1501.7643	1.58923	1508.2300	1.59016	1514.7096
1/16	1.58833	1501.9662	1.58926	1508.4323	1.59019	1514.9124
3/32	1.58836	1502.1680	1.58929	1508.6346	1.59022	1515.1151
1/8	1.58839	1502.3699	1.58932	1508.8369	1.59025	1515.3178
5/32	1.58842	1502.5718	1.58935	1509.0392	1.59028	1515.5206
3/16	1.58845	1502.7737	1.58938	1509.2416	1.59031	1515.7233
7/32	1.58848	1502.9756	1.58941	1509.4439	1.59034	1515.9261
1/4	1.58851	1503.1775	1.58944	1509.6463	1.59037	1516.1289
9/32	1.58853	1503.3795	1.58947	1509.8486	1.59040	1516.3317
5/16	1.58856	1503.5814	1.58950	1510.0510	1.59043	1516.5345
11/32	1.58859	1503.7834	1.58952	1510.2534	1.59046	1516.7374
3/8	1.58862	1503.9854	1.58955	1510.4558	1.59048	1516.9402
13/32	1.58865	1504.1873	1.58958	1510.6583	1.59051	1517.1431
7/16	1.58868	1504.3893	1.58961	1510.8607	1.59054	1517.3459
15/32	1.58871	1504.5914	1.58964	1511.0632	1.59057	1517.5488
1/2	1.58874	1504.7934	1.58967	1511.2656	1.59060	1517.7517
17/32	1.58877	1504.9954	1.58970	1511.4681	1.59063	1517.9547
9/16	1.58880	1505.1975	1.58973	1511.6706	1.59066	1518.1576
19/32	1.58883	1505.3996	1.58976	1511.8731	1.59069	1518.3605
5/8	1.58886	1505.6017	1.58979	1512.0756	1.59072	1518.5635
21/32	1.58888	1505.8038	1.58982	1512.2782	1.59075	1518.7664
11/16	1.58891	1506.0059	1.58984	1512.4807	1.59077	1518.9694
23/32	1.58894	1506.2080	1.58987	1512.6833	1.59080	1519.1724
3/4	1.58897	1506.4102	1.58990	1512.8859	1.59083	1519.3754
25/32	1.58900	1506.6123	1.58993	1513.0884	1.59086	1519.5785
13/16	1.58903	1506.8145	1.58996	1513.2910	1.59089	1519.7815
27/32	1.58906	1507.0167	1.58999	1513.4937	1.59092	1519.9845
7/8	1.58909	1507.2189	1.59002	1513.6963	1.59095	1520.1876
29/32	1.58912	1507.4211	1.59005	1513.8989	1.59098	1520.3907
15/16	1.58915	1507.6233	1.59008	1514.1016	1.59101	1520.5938
31/32	1.58918	1507.8255	1.59011	1514.3043	1.59104	1520.7969
1	1.58920	1508.0278	1.59014	1514.5069	1.59106	1521.0000

39′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.59106	1521.0000	1.59199	1527.5069	1.59292	1534.0278
1/32	1.59109	1521.2031	1.59202	1527.7105	1.59295	1534.2318
1/16	1.59112	1521.4063	1.59205	1527.9141	1.59297	1534.4358
3/32	1.59115	1521.6094	1.59208	1528.1177	1.59300	1534.6398
1/8	1.59118	1521.8126	1.59211	1528.3213	1.59303	1534.8439
5/32	1.59121	1522.0158	1.59214	1528.5249	1.59306	1535.0479
3/16	1.59124	1522.2190	1.59217	1528.7285	1.59309	1535.2520
7/32	1.59127	1522.4222	1.59219	1528.9322	1.59312	1535.4561
1/4	1.59130	1522.6254	1.59222	1529.1359	1.59315	1535.6602
9/32	1.59133	1522.8287	1.59225	1529.3395	1.59318	1535.8643
5/16	1.59135	1523.0319	1.59228	1529.5432	1.59321	1536.0684
11/32	1.59138	1523.2352	1.59231	1529.7469	1.59323	1536.2725
3/8	1.59141	1523.4385	1.59234	1529.9506	1.59326	1536.4767
13/32	1.59144	1523.6418	1.59237	1530.1544	1.59329	1536.6808
7/16	1.59147	1523.8451	1.59240	1530.3581	1.59332	1536.8850
15/32	1.59150	1524.0484	1.59243	1530.5619	1.59335	1537.0892
1/2	1.59153	1524.2517	1.59245	1530.7656	1.59338	1537.2934
17/32	1.59156	1524.4551	1.59248	1530.9694	1.59341	1537.4976
9/16	1.59159	1524.6584	1.59251	1531.1732	1.59344	1537.7019
19/32	1.59162	1524.8618	1.59254	1531.3770	1.59346	1537.9061
5/8	1.59164	1525.0652	1.59257	1531.5808	1.59349	1538.1104
21/32	1.59167	1525.2686	1.59260	1531.7847	1.59352	1538.3146
11/16	1.59170	1525.4720	1.59263	1531.9885	1.59355	1538.5189
23/32	1.59173	1525.6755	1.59266	1532.1924	1.59358	1538.7232
3/4	1.59176	1525.8789	1.59269	1532.3963	1.59361	1538.9275
25/32	1.59179	1526.0824	1.59271	1532.6002	1.59364	1539.1318
13/16	1.59182	1526.2858	1.59274	1532.8041	1.59367	1539.3362
27/32	1.59185	1526.4893	1.59277	1533.0080	1.59370	1539.5405
7/8	1.59188	1526.6928	1.59280	1533.2119	1.59372	1539.7449
29/32	1.59190	1526.8963	1.59283	1533.4159	1.59375	1539.9493
15/16	1.59193	1527.0999	1.59286	1533.6198	1.59378	1540.1537
31/32	1.59196	1527.3034	1.59289	1533.8238	1.59381	1540.3581
1	1.59199	1527.5069	1.59292	1534.0278	1.59384	1540.5625

39′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.59384	1540.5625	1.59476	1547.1111	1.59568	1553.6736
1/32	1.59387	1540.7669	1.59479	1547.3160	1.59571	1553.8789
1/16	1.59390	1540.9714	1.59482	1547.5209	1.59574	1554.0842
3/32	1.59393	1541.1758	1.59485	1547.7258	1.59577	1554.2896
1/8	1.59395	1541.3803	1.59488	1547.9307	1.59579	1554.4949
5/32	1.59398	1541.5848	1.59490	1548.1356	1.59582	1554.7003
3/16	1.59401	1541.7893	1.59493	1548.3405	1.59585	1554.9056
7/32	1.59404	1541.9938	1.59496	1548.5455	1.59588	1555.1110
1/4	1.59407	1542.1984	1.59499	1548.7504	1.59591	1555.3164
9/32	1.59410	1542.4029	1.59502	1548.9554	1.59594	1555.5218
5/16	1.59413	1542.6074	1.59505	1549.1604	1.59597	1555.7272
11/32	1.59416	1542.8120	1.59508	1549.3654	1.59600	1555.9327
3/8	1.59419	1543.0166	1.59511	1549.5704	1.59602	1556.1381
13/32	1.59421	1543.2212	1.59513	1549.7755	1.59605	1556.3436
7/16	1.59424	1543.4258	1.59516	1549.9805	1.59608	1556.5491
15/32	1.59427	1543.6304	1.59519	1550.1856	1.59611	1556.7546
1/2	1.59430	1543.8351	1.59522	1550.3906	1.59614	1556.9601
17/32	1.59433	1544.0397	1.59525	1550.5957	1.59617	1557.1656
9/16	1.59436	1544.2444	1.59528	1550.8008	1.59620	1557.3711
19/32	1.59439	1544.4491	1.59531	1551.0059	1.59622	1557.5767
5/8	1.59442	1544.6538	1.59534	1551.2110	1.59625	1557.7822
21/32	1.59444	1544.8585	1.59536	1551.4162	1.59628	1557.9878
11/16	1.59447	1545.0632	1.59539	1551.6213	1.59631	1558.1934
23/32	1.59450	1545.2679	1.59542	1551.8265	1.59634	1558.3990
3/4	1.59453	1545.4727	1.59545	1552.0317	1.59637	1558.6046
25/32	1.59456	1545.6774	1.59548	1552.2369	1.59640	1558.8102
13/16	1.59459	1545.8822	1.59551	1552.4421	1.59643	1559.0159
27/32	1.59462	1546.0870	1.59554	1552.6473	1.59645	1559.2215
7/8	1.59465	1546.2918	1.59557	1552.8525	1.59648	1559 4272
29/32	1.59467	1546.4966	1.59559	1553.0578	1.59651	1559.6329
15/16	1.59470	1546.7014	1.59562	1553.2630	1.59654	1559.8386
31/32	1.59473	1546.9063	1.59565	1553.4683	1.59657	1560.0443
1	1.59476	1547.1111	1.59568	1553.6736	1.59660	1560.2500

39′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.59660	1560.2500	1.59751	1566.8403	1.59843	1573.4444
1/32	1.59663	1560.4557	1.59754	1567.0464	1.59845	1573.6510
1/16	1.59665	1560.6615	1.59757	1567.2526	1.59848	1573.8577
3/32	1.59668	1560.8672	1.59760	1567.4588	1.59851	1574.0643
⅛	1.59671	1561.0730	1.59763	1567.6650	1.59854	1574.2709
5/32	1.59674	1561.2788	1.59766	1567.8713	1.59857	1574.4776
3/16	1.59677	1561.4846	1.59768	1568.0775	1.59860	1574.6843
7/32	1.59680	1561.6904	1.59771	1568.2838	1.59863	1574.8910
¼	1.59683	1561.8963	1.59774	1568.4900	1.59865	1575.0977
9/32	1.59685	1562.1021	1.59777	1568.6963	1.59868	1575.3044
5/16	1.59688	1562.3080	1.59780	1568.9026	1.59871	1575.5111
11/32	1.59691	1562.5138	1.59783	1569.1089	1.59874	1575.7178
⅜	1.59694	1562.7197	1.59786	1569.3152	1.59877	1575.9246
13/32	1.59697	1562.9256	1.59788	1569.5215	1.59880	1576.1314
7/16	1.59700	1563.1315	1.59791	1569.7279	1.59882	1576.3381
15/32	1.59703	1563.3375	1.59794	1569.9343	1.59885	1576.5449
½	1.59705	1563.5434	1.59797	1570.1406	1.59888	1576.7517
17/32	1.59708	1563.7494	1.59800	1570.3470	1.59891	1576.9586
9/16	1.59711	1563.9553	1.59803	1570.5534	1.59894	1577.1654
19/32	1.59714	1564.1613	1.59805	1570.7598	1.59897	1577.3722
⅝	1.59717	1564.3673	1.59808	1570.9663	1.59900	1577.5791
21/32	1.59720	1564.5733	1.59811	1571.1727	1.59902	1577.7860
11/16	1.59723	1564.7793	1.59814	1571.3792	1.59905	1577.9929
23/32	1.59726	1564.9854	1.59817	1571.5856	1.59908	1578.1998
¾	1.59728	1565.1914	1.59820	1571.7921	1.59911	1578.4067
25/32	1.59731	1565.3975	1.59823	1571.9986	1.59914	1578.6136
13/16	1.59734	1565.6035	1.59825	1572.2051	1.59917	1578.8206
27/32	1.59737	1565.8096	1.59828	1572.4116	1.59919	1579.0275
⅞	1.59740	1566.0157	1.59831	1572.6182	1.59922	1579.2345
29/32	1.59743	1566.2218	1.59834	1572.8247	1.59925	1579.4415
15/16	1.59746	1566.4280	1.59837	1573.0313	1.59928	1579.6485
31/32	1.59748	1566.6341	1.59840	1573.2379	1.59931	1579.8555
1	1.59751	1566.8403	1.59843	1573.4444	1.59934	1580.0625

39′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.59934	1580.0625	1.60025	1586.6944	1.60115	1593.3403
1/32	1.59937	1580.2695	1.60028	1586.9019	1.60118	1593.5482
1/16	1.59939	1580.4766	1.60030	1587.1094	1.60121	1593.7561
3/32	1.59942	1580.6837	1.60033	1587.3169	1.60124	1593.9640
1/8	1.59945	1580.8907	1.60036	1587.5244	1.60127	1594.1720
5/32	1.59948	1581.0978	1.60039	1587.7319	1.60130	1594.3799
3/16	1.59951	1581.3049	1.60042	1587.9395	1.60132	1594.5879
7/32	1.59954	1581.5121	1.60045	1588.1470	1.60135	1594.7959
1/4	1.59956	1581.7192	1.60047	1588.3546	1.60138	1595.0039
9/32	1.59959	1581.9263	1.60050	1588.5622	1.60141	1595.2119
5/16	1.59962	1582.1335	1.60053	1588.7698	1.60144	1595.4199
11/32	1.59965	1582.3407	1.60056	1588.9774	1.60147	1595.6280
3/8	1.59968	1582.5479	1.60059	1589.1850	1.60149	1595.8360
13/32	1.59971	1582.7551	1.60062	1589.3926	1.60152	1596.0441
7/16	1.59974	1582.9623	1.60064	1589.6003	1.60155	1596.2522
15/32	1.59976	1583.1695	1.60067	1589.8079	1.60158	1596.4603
1/2	1.59979	1583.3767	1.60070	1590.0156	1.60161	1596.6684
17/32	1.59982	1583.5840	1.60073	1590.2233	1.60164	1596.8765
9/16	1.59985	1583.7913	1.60076	1590.4310	1.60166	1597.0847
19/32	1.59988	1583.9985	1.60079	1590.6387	1.60169	1597.2928
5/8	1.59991	1584.2058	1.60081	1590.8465	1.60172	1597.5010
21/32	1.59993	1584.4131	1.60084	1591.0542	1.60175	1597.7092
11/16	1.59996	1584.6205	1.60087	1591.2620	1.60178	1597.9173
23/32	1.59999	1584.8278	1.60090	1591.4697	1.60181	1598.1255
3/4	1.60002	1585.0352	1.60093	1591.6775	1.60183	1598.3338
25/32	1.60005	1585.2425	1.60096	1591.8853	1.60186	1598.5420
13/16	1.60008	1585.4499	1.60098	1592.0931	1.60189	1598.7502
27/32	1.60010	1585.6573	1.60101	1592.3010	1.60192	1598.9585
7/8	1.60013	1585.8647	1.60104	1592.5088	1.60195	1599.1668
29/32	1.60016	1586.0721	1.60107	1592.7166	1.60198	1599.3751
15/16	1.60019	1586.2795	1.60110	1592.9245	1.60200	1599.5834
31/32	1.60022	1586.4870	1.60113	1593.1324	1.60203	1599.7917
1	1.60025	1586.6944	1.60115	1593.3403	1.60206	1600.0000

40′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.60206	1600.0000	1.60296	1606.6736	1.60387	1613.3611
1/32	1.60209	1600.2083	1.60299	1606.8824	1.60389	1613.5703
1/16	1.60212	1600.4167	1.60302	1607.0912	1.60392	1613.7795
3/32	1.60214	1600.6251	1.60305	1607.3000	1.60395	1613.9888
1/8	1.60217	1600.8334	1.60308	1607.5088	1.60398	1614.1980
5/32	1.60220	1601.0418	1.60310	1607.7176	1.60401	1614.4073
3/16	1.60223	1601.2502	1.60313	1607.9265	1.60403	1614.6166
7/32	1.60226	1601.4587	1.60316	1608.1353	1.60406	1614.8259
1/4	1.60229	1601.6671	1.60319	1608.3442	1.60409	1615.0352
9/32	1.60231	1601.8755	1.60322	1608.5531	1.60412	1615.2445
5/16	1.60234	1602.0840	1.60325	1608.7620	1.60415	1615.4538
11/32	1.60237	1602.2925	1.60327	1608.9709	1.60418	1615.6631
3/8	1.60240	1602.5010	1.60330	1609.1798	1.60420	1615.8725
13/32	1.60243	1602.7095	1.60333	1609.3887	1.60423	1616.0819
7/16	1.60246	1602.9180	1.60336	1609.5977	1.60426	1616.2913
15/32	1.60248	1603.1265	1.60339	1609.8066	1.60429	1616.5007
1/2	1.60251	1603.3351	1.60342	1610.0156	1.60432	1616.7101
17/32	1.60254	1603.5436	1.60344	1610.2246	1.60434	1616.9195
9/16	1.60257	1603.7522	1.60347	1610.4336	1.60437	1617.1289
19/32	1.60260	1603.9608	1.60350	1610.6426	1.60440	1617.3384
5/8	1.60263	1604.1694	1.60353	1610.8517	1.60443	1617.5479
21/32	1.60265	1604.3780	1.60356	1611.0607	1.60446	1617.7573
11/16	1.60268	1604.5866	1.60358	1611.2698	1.60448	1617.9668
23/32	1.60271	1604.7953	1.60361	1611.4788	1.60451	1618.1763
3/4	1.60274	1605.0039	1.60364	1611.6879	1.60454	1618.3859
25/32	1.60277	1605.2126	1.60367	1611.8970	1.60457	1618.5954
13/16	1.60279	1605.4213	1.60370	1612.1061	1.60460	1618.8049
27/32	1.60282	1605.6299	1.60372	1612.3153	1.60463	1619.0145
7/8	1.60285	1605.8386	1.60375	1612.5244	1.60465	1619.2241
29/32	1.60288	1606.0474	1.60378	1612.7336	1.60468	1619.4337
15/16	1.60291	1606.2561	1.60381	1612.9427	1.60471	1619.6433
31/32	1.60294	1606.4649	1.60384	1613.1519	1.60474	1619.8529
1	1.60296	1606.6736	1.60387	1613.3611	1.60477	1620.0625

40′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.60477	1620.0625	1.60566	1626.7778	1.60656	1633.5069
1/32	1.60479	1620.2721	1.60569	1626.9879	1.60659	1633.7175
1/16	1.60482	1620.4818	1.60572	1627.1979	1.60662	1633.9280
3/32	1.60485	1620.6915	1.60575	1627.4080	1.60664	1634.1385
⅛	1.60488	1620.9012	1.60578	1627.6182	1.60667	1634.3491
5/32	1.60491	1621.1108	1.60580	1627.8283	1.60670	1634.5596
3/16	1.60493	1621.3206	1.60583	1628.0384	1.60673	1634.7702
7/32	1.60496	1621.5303	1.60586	1628.2486	1.60676	1634.9808
¼	1.60499	1621.7400	1.60589	1628.4588	1.60678	1635.1914
9/32	1.60502	1621.9498	1.60592	1628.6690	1.60681	1635.4020
5/16	1.60505	1622.1595	1.60594	1628.8792	1.60684	1635.6127
11/32	1.60507	1622.3693	1.60597	1629.0894	1.60687	1635.8233
⅜	1.60510	1622.5791	1.60600	1629.2996	1.60690	1636.0340
13/32	1.60513	1622.7889	1.60603	1629.5098	1.60692	1636.2446
7/16	1.60516	1622.9987	1.60606	1629.7201	1.60695	1636.4553
15/32	1.60519	1623.2086	1.60608	1629.9303	1.60698	1636.6660
½	1.60522	1623.4184	1.60611	1630.1406	1.60701	1636.8767
17/32	1.60524	1623.6283	1.60614	1630.3509	1.60704	1637.0875
9/16	1.60527	1623.8381	1.60617	1630.5612	1.60706	1637.2982
19/32	1.60530	1624.0480	1.60620	1630.7715	1.60709	1637.5090
⅝	1.60533	1624.2579	1.60622	1630.9819	1.60712	1637.7197
21/32	1.60536	1624.4678	1.60625	1631.1922	1.60715	1637.9305
11/16	1.60538	1624.6778	1.60628	1631.4026	1.60718	1638.1413
23/32	1.60541	1624.8877	1.60631	1631.6130	1.60720	1638.3521
¾	1.60544	1625.0977	1.60634	1631.8234	1.60723	1638.5629
25/32	1.60547	1625.3076	1.60636	1632.0338	1.60726	1638.7738
13/16	1.60550	1625.5176	1.60639	1632.2442	1.60729	1638.9846
27/32	1.60552	1625.7276	1.60642	1632.4546	1.60732	1639.1955
⅞	1.60555	1625.9376	1.60645	1632.6650	1.60734	1639.4064
29/32	1.60558	1626.1476	1.60648	1632.8755	1.60737	1639.6172
15/16	1.60561	1626.3577	1.60650	1633.0860	1.60740	1639.8282
31/32	1.60564	1626.5677	1.60653	1633.2964	1.60743	1640.0391
1	1.60566	1626.7778	1.60656	1633.5069	1.60746	1640.2500

40′

Fractions of an Inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.60746	1640.2500	1.60835	1647.0069	1.60924	1653.7778
1/32	1.60748	1640.4609	1.60838	1647.2183	1.60927	1653.9896
1/16	1.60751	1640.6719	1.60840	1647.4297	1.60929	1654.2014
3/32	1.60754	1640.8829	1.60843	1647.6411	1.60932	1654.4133
1/8	1.60757	1641.0939	1.60846	1647.8525	1.60935	1654.6251
5/32	1.60759	1641.3049	1.60849	1648.0640	1.60938	1654.8370
3/16	1.60762	1641.5159	1.60851	1648.2754	1.60941	1655.0489
7/32	1.60765	1641.7269	1.60854	1648.4869	1.60943	1655.2607
1/4	1.60768	1641.9379	1.60857	1648.6984	1.60946	1655.4727
9/32	1.60771	1642.1490	1.60860	1648.9098	1.60949	1655.6846
5/16	1.60773	1642.3601	1.60863	1649.1213	1.60952	1655.8965
11/32	1.60776	1642.5711	1.60865	1649.3329	1.60954	1656.1085
3/8	1.60779	1642.7822	1.60868	1649.5444	1.60957	1656.3204
13/32	1.60782	1642.9933	1.60871	1649.7559	1.60960	1656.5324
7/16	1.60785	1643.2045	1.60874	1649.9675	1.60963	1656.7444
15/32	1.60787	1643.4156	1.60877	1650.1790	1.60966	1656.9564
1/2	1.60790	1643.6267	1.60879	1650.3906	1.60968	1657.1684
17/32	1.60793	1643.8379	1.60882	1650.6022	1.60971	1657.3804
9/16	1.60796	1644.0491	1.60885	1650.8138	1.60974	1657.5925
19/32	1.60799	1644.2603	1.60888	1651.0255	1.60977	1657.8045
5/8	1.60801	1644.4715	1.60890	1651.2371	1.60979	1658.0166
21/32	1.60804	1644.6827	1.60893	1651.4487	1.60982	1658.2287
11/16	1.60807	1644.8939	1.60896	1651.6604	1.60985	1658.4408
23/32	1.60810	1645.1052	1.60899	1651.8721	1.60988	1658.6529
3/4	1.60812	1645.3164	1.60902	1652.0838	1.60991	1658.8650
25/32	1.60815	1645.5277	1.60904	1652.2955	1.60993	1659.0772
13/16	1.60818	1645.7390	1.60907	1652.5072	1.60996	1659.2893
27/32	1.60821	1645.9503	1.60910	1652.7189	1.60999	1659.5015
7/8	1.60824	1646.1616	1.60913	1652.9307	1.61002	1659.7137
29/32	1.60826	1646.3729	1.60916	1653.1424	1.61004	1659.9258
15/16	1.60829	1646.5842	1.60918	1653.3542	1.61007	1660.1380
31/32	1.60832	1646.7956	1.60921	1653.5660	1.61010	1660.3503
1	1.60835	1647.0069	1.60924	1653.7778	1.61013	1660.5625

40′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.61013	1660.5625	1.61101	1667.3611	1.61190	1674.1736
1/32	1.61016	1660.7747	1.61104	1667.5738	1.61193	1674.3867
1/16	1.61018	1660.9870	1.61107	1667.7865	1.61196	1674.5999
3/32	1.61021	1661.1993	1.61110	1667.9992	1.61198	1674.8130
1/8	1.61024	1661.4116	1.61113	1668.2119	1.61201	1675.0262
5/32	1.61027	1661.6239	1.61115	1668.4246	1.61204	1675.2393
3/16	1.61029	1661.8362	1.61118	1668.6374	1.61207	1675.4525
7/32	1.61032	1662.0485	1.61121	1668.8502	1.61209	1675.6657
1/4	1.61035	1662.2609	1.61124	1669.0629	1.61212	1675.8789
9/32	1.61038	1662.4732	1.61126	1669.2757	1.61215	1676.0921
5/16	1.61041	1662.6856	1.61129	1669.4885	1.61218	1676.3054
11/32	1.61043	1662.8980	1.61132	1669.7013	1.61220	1676.5186
3/8	1.61046	1663.1104	1.61135	1669.9142	1.61223	1676.7319
13/32	1.61049	1663.3228	1.61137	1670.1270	1.61226	1676.9452
7/16	1.61052	1663.5352	1.61140	1670.3399	1.61229	1677.1584
15/32	1.61054	1663.7476	1.61143	1670.5527	1.61231	1677.3718
1/2	1.61057	1663.9601	1.61146	1670.7656	1.61234	1677.5851
17/32	1.61060	1664.1725	1.61149	1670.9785	1.61237	1677.7984
9/16	1.61063	1664.3850	1.61151	1671.1914	1.61240	1678.0117
19/32	1.61065	1664.5975	1.61154	1671.4044	1.61243	1678.2251
5/8	1.61068	1664.8100	1.61157	1671.6173	1.61245	1678.4385
21/32	1.61071	1665.0225	1.61160	1671.8302	1.61248	1678.6519
11/16	1.61074	1665.2351	1.61162	1672.0432	1.61251	1678.8653
23/32	1.61077	1665.4476	1.61165	1672.2562	1.61254	1679.0787
3/4	1.61079	1665.6602	1.61168	1672.4692	1.61256	1679.2921
25/32	1.61082	1665.8727	1.61171	1672.6822	1.61259	1679.5055
13/16	1.61085	1666.0853	1.61173	1672.8952	1.61262	1679.7190
27/32	1.61088	1666.2979	1.61176	1673.1082	1.61265	1679.9325
7/8	1.61090	1666.5105	1.61179	1673.3213	1.61267	1680.1459
29/32	1.61093	1666.7232	1.61182	1673.5343	1.61270	1680.3594
15/16	1.61096	1666.9358	1.61184	1673.7474	1.61273	1680.5729
31/32	1.61099	1667.1484	1.61187	1673.9605	1.61276	1680.7865
1	1.61101	1667.3611	1.61190	1674.1736	1.61278	1681.0000

41′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.61278	1681.0000	1.61367	1687.8403	1.61455	1694.6944
1/32	1.61281	1681.2135	1.61369	1688.0543	1.61457	1694.9089
1/16	1.61284	1681.4271	1.61372	1688.2683	1.61460	1695.1233
3/32	1.61287	1681.6407	1.61375	1688.4823	1.61463	1695.3377
1/8	1.61289	1681.8543	1.61378	1688.6963	1.61466	1695.5522
5/32	1.61292	1682.0679	1.61380	1688.9103	1.61468	1695.7667
3/16	1.61295	1682.2815	1.61383	1689.1244	1.61471	1695.9811
7/32	1.61298	1682.4951	1.61386	1689.3384	1.61474	1696.1956
1/4	1.61300	1682.7088	1.61389	1689.5525	1.61477	1696.4102
9/32	1.61303	1682.9224	1.61391	1689.7666	1.61479	1696.6247
5/16	1.61306	1683.1361	1.61394	1689.9807	1.61482	1696.8392
11/32	1.61309	1683.3498	1.61397	1690.1948	1.61485	1697.0538
3/8	1.61311	1683.5635	1.61400	1690.4090	1.61488	1697.2683
13/32	1.61314	1683.7772	1.61402	1690.6231	1.61490	1697.4829
7/16	1.61317	1683.9909	1.61405	1690.8373	1.61493	1697.6975
15/32	1.61320	1684.2047	1.61408	1691.0514	1.61496	1697.9121
1/2	1.61322	1684.4184	1.61411	1691.2656	1.61499	1698.1267
17/32	1.61325	1684.6322	1.61413	1691.4798	1.61501	1698.3414
9/16	1.61328	1684.8459	1.61416	1691.6940	1.61504	1698.5560
19/32	1.61331	1685.0597	1.61419	1691.9083	1.61507	1698.7707
5/8	1.61334	1685.2735	1.61422	1692.1225	1.61509	1698.9854
21/32	1.61336	1685.4874	1.61424	1692.3368	1.61512	1699.2000
11/16	1.61339	1685.7012	1.61427	1692.5510	1.61515	1699.4147
23/32	1.61342	1685.9150	1.61430	1692.7653	1.61518	1699.6295
3/4	1.61345	1686.1289	1.61433	1692.9796	1.61520	1699.8442
25/32	1.61347	1686.3428	1.61435	1693.1939	1.61523	1700.0589
13/16	1.61350	1686.5567	1.61438	1693.4082	1.61526	1700.2737
27/32	1.61353	1686.7706	1.61441	1693.6226	1.61529	1700.4885
7/8	1.61356	1686.9845	1.61444	1693.8369	1.61531	1700.7032
29/32	1.61358	1687.1984	1.61446	1694.0513	1.61534	1700.9180
15/16	1.61361	1687.4124	1.61449	1694.2657	1.61537	1701.1328
31/32	1.61364	1687.6263	1.61452	1694.4800	1.61540	1701.3477
1	1.61367	1687.8403	1.61455	1694.6944	1.61542	1701.5625

41′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.61542	1701.5625	1.61630	1708.4444	1.61718	1715.3403
1/32	1.61545	1701.7774	1.61633	1708.6597	1.61720	1715.5560
1/16	1.61548	1701.9922	1.61636	1708.8750	1.61723	1715.7717
3/32	1.61551	1702.2071	1.61638	1709.0903	1.61726	1715.9875
1/8	1.61553	1702.4220	1.61641	1709.3057	1.61728	1716.2032
5/32	1.61556	1702.6369	1.61644	1709.5210	1.61731	1716.4190
3/16	1.61559	1702.8518	1.61646	1709.7364	1.61734	1716.6348
7/32	1.61562	1703.0667	1.61649	1709.9517	1.61737	1716.8506
1/4	1.61564	1703.2817	1.61652	1710.1671	1.61739	1717.0664
9/32	1.61567	1703.4966	1.61655	1710.3825	1.61742	1717.2822
5/16	1.61570	1703.7116	1.61657	1710.5979	1.61745	1717.4981
11/32	1.61573	1703.9266	1.61660	1710.8133	1.61748	1717.7139
3/8	1.61575	1704.1416	1.61663	1711.0288	1.61750	1717.9298
13/32	1.61578	1704.3566	1.61666	1711.2442	1.61753	1718.1457
7/16	1.61581	1704.5716	1.61668	1711.4597	1.61756	1718.3616
15/32	1.61584	1704.7867	1.61671	1711.6751	1.61758	1718.5775
1/2	1.61586	1705.0017	1.61674	1711.8906	1.61761	1718.7934
17/32	1.61589	1705.2168	1.61677	1712.1061	1.61764	1719.0093
9/16	1.61592	1705.4319	1.61679	1712.3216	1.61767	1719.2253
19/32	1.61594	1705.6470	1.61682	1712.5372	1.61769	1719.4413
5/8	1.61597	1705.8621	1.61685	1712.7527	1.61772	1719.6572
21/32	1.61600	1706.0772	1.61687	1712.9683	1.61775	1719.8732
11/16	1.61603	1706.2923	1.61690	1713.1838	1.61778	1720.0892
23/32	1.61605	1706.5075	1.61693	1713.3994	1.61780	1720.3052
3/4	1.61608	1706.7227	1.61696	1713.6150	1.61783	1720.5213
25/32	1.61611	1706.9378	1.61698	1713.8306	1.61786	1720.7373
13/16	1.61614	1707.1530	1.61701	1714.0463	1.61788	1720.9534
27/32	1.61616	1707.3682	1.61704	1714.2619	1.61791	1721.1694
7/8	1.61619	1707.5834	1.61707	1714.4775	1.61794	1721.3855
29/32	1.61622	1707.7987	1.61709	1714.6932	1.61797	1721.6016
15/16	1.61625	1708.0139	1.61712	1714.9089	1.61799	1721.8177
31/32	1.61627	1708.2292	1.61715	1715.1246	1.61802	1722.0339
1	1.61630	1708.4444	1.61718	1715.3403	1.61805	1722.2500

41′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.61805	1722.2500	1.61892	1729.1736	1.61979	1736.1111
1/32	1.61808	1722.4662	1.61895	1729.3902	1.61982	1736.3281
1/16	1.61810	1722.6823	1.61897	1729.6068	1.61984	1736.5452
3/32	1.61813	1722.8985	1.61900	1729.8234	1.61987	1736.7622
1/8	1.61816	1723.1147	1.61903	1730.0400	1.61990	1736.9793
5/32	1.61818	1723.3309	1.61906	1730.2567	1.61992	1737.1964
3/16	1.61821	1723.5471	1.61908	1730.4733	1.61995	1737.4134
7/32	1.61824	1723.7634	1.61911	1730.6900	1.61998	1737.6305
1/4	1.61827	1723.9796	1.61914	1730.9067	1.62001	1737.8477
9/32	1.61829	1724.1959	1.61916	1731.1234	1.62003	1738.0648
5/16	1.61832	1724.4121	1.61919	1731.3401	1.62006	1738.2819
11/32	1.61835	1724.6284	1.61922	1731.5568	1.62009	1738.4991
3/8	1.61838	1724.8447	1.61925	1731.7735	1.62011	1738.7163
13/32	1.61840	1725.0610	1.61927	1731.9903	1.62014	1738.9334
7/16	1.61843	1725.2774	1.61930	1732.2071	1.62017	1739.1506
15/32	1.61846	1725.4937	1.61933	1732.4238	1.62020	1739.3678
1/2	1.61848	1725.7101	1.61935	1732.6406	1.62022	1739.5851
17/32	1.61851	1725.9264	1.61938	1732.8574	1.62025	1739.8023
9/16	1.61854	1726.1428	1.61941	1733.0742	1.62028	1740.0196
19/32	1.61857	1726.3592	1.61944	1733.2911	1.62030	1740.2368
5/8	1.61859	1726.5756	1.61946	1733.5079	1.62033	1740.4541
21/32	1.61862	1726.7921	1.61949	1733.7248	1.62036	1740.6714
11/16	1.61865	1727.0085	1.61952	1733.9417	1.62039	1740.8887
23/32	1.61867	1727.2249	1.61954	1734.1585	1.62041	1741.1060
3/4	1.61870	1727.4414	1.61957	1734.3754	1.62044	1741.3234
25/32	1.61873	1727.6579	1.61960	1734.5923	1.62047	1741.5407
13/16	1.61876	1727.8744	1.61963	1734.8093	1.62049	1741.7581
27/32	1.61878	1728.0909	1.61965	1735.0262	1.62052	1741.9754
7/8	1.61881	1728.3074	1.61968	1735.2432	1.62055	1742.1928
29/32	1.61884	1728.5239	1.61971	1735.4601	1.62058	1742.4102
15/16	1.61886	1728.7405	1.61973	1735.6771	1.62060	1742.6276
31/32	1.61889	1728.9570	1.61976	1735.8941	1.62063	1742.8451
1	1.61892	1729.1736	1.61979	1736.1111	1.62066	1743.0625

41'

Fractions of an Inch.	9"		10"		11"	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.62066	1743.0625	1.62152	1750.0278	1.62239	1757.0069
1/32	1.62068	1743.2800	1.62155	1750.2457	1.62241	1757.2253
1/16	1.62071	1743.4974	1.62158	1750.4636	1.62244	1757.4436
3/32	1.62074	1743.7149	1.62160	1750.6815	1.62247	1757.6620
1/8	1.62076	1743.9324	1.62163	1750.8994	1.62249	1757.8803
5/32	1.62079	1744.1499	1.62166	1751.1174	1.62252	1758.0987
3/16	1.62082	1744.3674	1.62168	1751.3353	1.62255	1758.3171
7/32	1.62085	1744.5850	1.62171	1751.5533	1.62258	1758.5355
1/4	1.62087	1744.8025	1.62174	1751.7713	1.62260	1758.7539
9/32	1.62090	1745.0201	1.62177	1751.9893	1.62263	1758.9723
5/16	1.62093	1745.2377	1.62179	1752.2073	1.62266	1759.1908
11/32	1.62095	1745.4552	1.62182	1752.4253	1.62268	1759.4092
3/8	1.62098	1745.6729	1.62185	1752.6433	1.62271	1759.6277
13/32	1.62101	1745.8905	1.62187	1752.8614	1.62274	1759.8462
7/16	1.62104	1746.1081	1.62190	1753.0795	1.62276	1760.0647
15/32	1.62106	1746.3257	1.62193	1753.2975	1.62279	1760.2832
1/2	1.62109	1746.5434	1.62195	1753.5156	1.62282	1760.5017
17/32	1.62112	1746.7611	1.62198	1753.7337	1.62285	1760.7203
9/16	1.62114	1746.9788	1.62201	1753.9519	1.62287	1760.9388
19/32	1.62117	1747.1965	1.62204	1754.1700	1.62290	1761.1574
5/8	1.62120	1747.4142	1.62206	1754.3881	1.62293	1761.3760
21/32	1.62122	1747.6319	1.62209	1754.6063	1.62295	1761.5946
11/16	1.62125	1747.8496	1.62212	1754.8245	1.62298	1761.8132
23/32	1.62128	1748.0674	1.62214	1755.0426	1.62301	1762.0318
3/4	1.62131	1748.2852	1.62217	1755.2609	1.62303	1762.2504
25/32	1.62133	1748.5029	1.62220	1755.4791	1.62306	1762.4691
13/16	1.62136	1748.7207	1.62222	1755.6973	1.62309	1762.6877
27/32	1.62139	1748.9385	1.62225	1755.9155	1.62311	1762.9064
7/8	1.62141	1749.1564	1.62228	1756.1338	1.62314	1763.1251
29/32	1.62144	1749 3742	1.62231	1756.3521	1.62317	1763.3438
15/16	1.62147	1749.5920	1.62233	1756.5703	1.62320	1763.5625
31/32	1.62150	1749.8099	1.62236	1756.7886	1.62322	1763.7813
1	1.62152	1750.0278	1.62239	1757.0069	1.62325	1764.0000

42′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.62325	1764.0000	1.62411	1771.0069	1.62497	1778.0278
1/32	1.62328	1764.2188	1.62414	1771.2261	1.62500	1778.2474
1/16	1.62330	1764.4375	1.62416	1771.4453	1.62502	1778.4670
3/32	1.62333	1764.6563	1.62419	1771.6646	1.62505	1778.6867
1/8	1.62336	1764.8751	1.62422	1771.8838	1.62508	1778.9064
5/32	1.62338	1765.0939	1.62424	1772.1030	1.62510	1779.1260
3/16	1.62341	1765.3127	1.62427	1772.3223	1.62513	1779.3457
7/32	1.62344	1765.5316	1.62430	1772.5416	1.62516	1779.5654
1/4	1.62346	1765.7504	1.62433	1772.7609	1.62518	1779.7852
9/32	1.62349	1765.9693	1.62435	1772.9802	1.62521	1780.0049
5/16	1.62352	1766.1882	1.62438	1773.1995	1.62524	1780.2246
11/32	1.62355	1766.4071	1.62441	1773.4188	1.62526	1780.4444
3/8	1.62357	1766.6260	1.62443	1773.6381	1.62529	1780.6642
13/32	1.62360	1766.8449	1.62446	1773.8575	1.62532	1780.8840
7/16	1.62363	1767.0638	1.62449	1774.0768	1.62534	1781.1038
15/32	1.62365	1767.2828	1.62451	1774.2962	1.62537	1781.3236
1/2	1.62368	1767.5017	1.62454	1774.5156	1.62540	1781.5434
17/32	1.62371	1767.7207	1.62457	1774.7350	1.62542	1781.7632
9/16	1.62373	1767.9397	1.62459	1774.9545	1.62545	1781.9831
19/32	1.62376	1768.1587	1.62462	1775.1739	1.62548	1782.2030
5/8	1.62379	1768.3777	1.62465	1775.3933	1.62551	1782.4229
21/32	1.62381	1768.5967	1.62467	1775.6128	1.62553	1782.6427
11/16	1.62384	1768.8158	1.62470	1775.8323	1.62556	1782.8627
23/32	1.62387	1769.0348	1.62473	1776.0518	1.62559	1783.0826
3/4	1.62390	1769.2539	1.62475	1776.2713	1.62561	1783.3025
25/32	1.62392	1769.4730	1.62478	1776.4908	1.62564	1783.5225
13/16	1.62395	1769.6921	1.62481	1776.7103	1.62567	1783.7424
27/32	1.62398	1769.9112	1.62484	1776.9299	1.62569	1783.9624
7/8	1.62400	1770.1303	1.62486	1777.1494	1.62572	1784.1824
29/32	1.62403	1770.3495	1.62489	1777.3690	1.62575	1784.4024
15/16	1.62406	1770.5686	1.62492	1777.5886	1.62577	1784.6224
31/32	1.62408	1770.7878	1.62494	1777.8082	1.62580	1784.8425
1	1.62411	1771.0069	1.62497	1778.0278	1.62583	1785.0625

42′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.62583	1785.0625	1.62668	1792.1111	1.62754	1799.1736
1/32	1.62585	1785.2826	1.62671	1792.3316	1.62756	1799.3945
1/16	1.62588	1785.5026	1.62674	1792.5521	1.62759	1799.6155
3/32	1.62591	1785.7227	1.62676	1792.7726	1.62762	1799.8364
1/8	1.62593	1785.9428	1.62679	1792.9932	1.62764	1800.0574
5/32	1.62596	1786.1629	1.62682	1793.2137	1.62767	1800.2784
3/16	1.62599	1786.3831	1.62684	1793.4343	1.62770	1800.4994
7/32	1.62601	1786.6032	1.62687	1793.6548	1.62772	1800.7204
1/4	1.62604	1786.8234	1.62690	1793.8754	1.62775	1800.9414
9/32	1.62607	1787.0435	1.62692	1794.0960	1.62778	1801.1624
5/16	1.62609	1787.2637	1.62695	1794.3167	1.62780	1801.3835
11/32	1.62612	1787.4839	1.62698	1794.5373	1.62783	1801.6046
3/8	1.62615	1787.7041	1.62700	1794.7579	1.62786	1801.8256
13/32	1.62617	1787.9243	1.62703	1794.9786	1.62788	1802.0467
7/16	1.62620	1788.1446	1.62706	1795.1992	1.62791	1802.2678
15/32	1.62623	1788.3648	1.62708	1795.4199	1.62794	1802.4889
1/2	1.62625	1788.5851	1.62711	1795.6406	1.62796	1802.7101
17/32	1.62628	1788.8053	1.62714	1795.8613	1.62799	1802.9312
9/16	1.62631	1789.0256	1.62716	1796.0821	1.62802	1803.1524
19/32	1.62634	1789.2459	1.62719	1796.3028	1.62804	1803.3735
5/8	1.62636	1789.4663	1.62722	1796.5235	1.62807	1803.5947
21/32	1.62639	1789.6866	1.62724	1796.7443	1.62810	1803.8159
11/16	1.62642	1789.9069	1.62727	1796.9651	1.62812	1804.0371
23/32	1.62644	1790.1273	1.62730	1797.1859	1.62815	1804.2584
3/4	1.62647	1790.3477	1.62732	1797.4067	1.62818	1804.4796
25/32	1.62650	1790.5680	1.62735	1797.6275	1.62820	1804.7009
13/16	1.62652	1790.7884	1.62738	1797.8483	1.62823	1804.9221
27/32	1.62655	1791.0089	1.62740	1798.0692	1.62826	1805.1434
7/8	1.62658	1791.2293	1.62743	1798.2900	1.62828	1805.3647
29/32	1.62660	1791.4497	1.62746	1798.5109	1.62831	1805.5860
15/16	1.62663	1791.6702	1.62748	1798.7318	1.62834	1805.8073
31/32	1.62666	1791.8906	1.62751	1798.9527	1.62836	1806.0287
1	1.62668	1792.1111	1.62754	1799.1736	1.62839	1806.2500

42′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.62839	1806.2500	1.62924	1813.3403	1.63009	1820.4444
1/32	1.62842	1806.4714	1.62927	1813.5621	1.63012	1820.6667
1/16	1.62844	1806.6927	1.62929	1813.7839	1.63014	1820.8889
3/32	1.62847	1806.9141	1.62932	1814.0057	1.63017	1821.1112
1/8	1.62850	1807.1355	1.62935	1814.2275	1.63019	1821.3334
5/32	1.62852	1807.3569	1.62937	1814.4494	1.63022	1821.5557
3/16	1.62855	1807.5784	1.62940	1814.6713	1.63025	1821.7780
7/32	1.62858	1807.7998	1.62943	1814.8931	1.63027	1822.0003
1/4	1.62860	1808.0213	1.62945	1815.1150	1.63030	1822.2227
9/32	1.62863	1808.2427	1.62948	1815.3369	1.63033	1822.4450
5/16	1.62865	1808.4642	1.62951	1815.5588	1.63035	1822.6673
11/32	1.62868	1808.6857	1.62953	1815.7808	1.63038	1822.8897
3/8	1.62871	1808.9072	1.62956	1816.0027	1.63041	1823.1121
13/32	1.62873	1809.1288	1.62958	1816.2247	1.63043	1823.3345
7/16	1.62876	1809.3503	1.62961	1816.4466	1.63046	1823.5569
15/32	1.62879	1809.5718	1.62964	1816.6686	1.63049	1823.7793
1/2	1.62881	1809.7934	1.62966	1816.8906	1.63051	1824.0017
17/32	1.62884	1810.0150	1.62969	1817.1126	1.63054	1824.2242
9/16	1.62887	1810.2366	1.62972	1817.3347	1.63057	1824.4466
19/32	1.62889	1810.4582	1.62974	1817.5567	1.63059	1824.6691
5/8	1.62892	1810.6798	1.62977	1817.7788	1.63062	1824.8916
21/32	1.62895	1810.9014	1.62980	1818.0008	1.63065	1825.1141
11/16	1.62897	1811.1231	1.62982	1818.2229	1.63067	1825.3366
23/32	1.62900	1811.3447	1.62985	1818.4450	1.63070	1825.5591
3/4	1.62903	1811.5664	1.62988	1818.6671	1.63072	1825.7817
25/32	1.62905	1811.7881	1.62990	1818.8892	1.63075	1826.0042
13/16	1.62908	1812.0098	1.62993	1819.1114	1.63078	1826.2268
27/32	1.62911	1812.2315	1.62996	1819.3335	1.63080	1826.4494
7/8	1.62913	1812.4532	1.62998	1819.5557	1.63083	1826.6720
29/32	1.62916	1812.6750	1.63001	1819.7778	1.63086	1826.8946
15/16	1.62919	1812.8967	1.63004	1820.0000	1.63088	1827.1172
31/32	1.62921	1813.1185	1.63006	1820.2222	1.63091	1827.3399
1	1.62924	1813.3403	1.63009	1820.4444	1.63094	1827.5625

42′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.63094	1827.5625	1.63178	1834.6944	1.63263	1841.8403
1/32	1.63096	1827.7852	1.63181	1834.9175	1.63265	1842.0638
1/16	1.63099	1828.0078	1.63183	1835.1407	1.63268	1842.2874
3/32	1.63102	1828.2305	1.63186	1835.3638	1.63271	1842.5109
⅛	1.63104	1828.4532	1.63189	1835.5869	1.63273	1842.7345
5/32	1.63107	1828.6760	1.63191	1835.8101	1.63276	1842.9581
3/16	1.63109	1828.8987	1.63194	1836.0332	1.63278	1843.1817
7/32	1.63112	1829.1214	1.63197	1836.2564	1.63281	1843.4053
¼	1.63115	1829.3442	1.63199	1836.4796	1.63284	1843.6289
9/32	1.63117	1829.5670	1.63202	1836.7028	1.63286	1843.8525
5/16	1.63120	1829.7897	1.63205	1836.9260	1.63289	1844.0762
11/32	1.63123	1830.0125	1.63207	1837.1493	1.63292	1844.2999
⅜	1.63125	1830.2354	1.63210	1837.3725	1.63294	1844.5235
13/32	1.63128	1830.4582	1.63212	1837.5958	1.63297	1844.7472
7/16	1.63131	1830.6810	1.63215	1837.8190	1.63299	1844.9709
15/32	1.63133	1830.9039	1.63218	1838.0423	1.63302	1845.1947
½	1.63136	1831.1267	1.63220	1838.2656	1.63305	1845.4184
17/32	1.63139	1831.3496	1.63223	1838.4889	1.63307	1845.6422
9/16	1.63141	1831.5725	1.63226	1838.7123	1.63310	1845.8659
19/32	1.63144	1831.7954	1.63228	1838.9356	1.63313	1846.0897
⅝	1.63146	1832.0183	1.63231	1839.1590	1.63315	1846.3135
21/32	1.63149	1832.2413	1.63234	1839.3823	1.63318	1846.5373
11/16	1.63152	1832.4642	1.63236	1839.6057	1.63321	1846.7611
23/32	1.63154	1832.6872	1.63239	1839.8291	1.63323	1846.9849
¾	1.63157	1832.9102	1.63242	1840.0525	1.63326	1847.2088
25/32	1.63160	1833.1331	1.63244	1840.2759	1.63328	1847.4326
13/16	1.63162	1833.3561	1.63247	1840.4994	1.63331	1847.6565
27/32	1.63165	1833.5792	1.63249	1840.7228	1.63334	1847.8804
⅞	1.63168	1833.8022	1.63252	1840.9463	1.63336	1848.1043
29/32	1.63170	1834.0252	1.63255	1841.1698	1.63339	1848.3282
15/16	1.63173	1834.2483	1.63257	1841.3933	1.63342	1848.5521
31/32	1.63176	1834.4714	1.63260	1841.6168	1.63344	1848.7760
1	1.63178	1834.6944	1.63263	1841.8403	1.63347	1849.0000

43′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.63347	1849.0000	1.63431	1856.1736	1.63515	1863.3611
1/32	1.63349	1849.2240	1.63434	1856.3980	1.63517	1863.5859
1/16	1.63352	1849.4479	1.63436	1856.6224	1.63520	1863.8108
3/32	1.63355	1849.6719	1.63439	1856.8468	1.63523	1864.0357
1/8	1.63357	1849.8959	1.63441	1857.0713	1.63525	1864.2605
5/32	1.63360	1850.1200	1.63444	1857.2957	1.63528	1864.4854
3/16	1.63363	1850.3440	1.63447	1857.5202	1.63531	1864.7103
7/32	1.63365	1850.5680	1.63449	1857.7447	1.63533	1864.9352
1/4	1.63368	1850.7921	1.63452	1857.9692	1.63536	1865.1602
9/32	1.63371	1851.0162	1.63455	1858.1937	1.63538	1865.3851
5/16	1.63373	1851.2403	1.63457	1858.4182	1.63541	1865.6101
11/32	1.63376	1851.4644	1.63460	1858.6427	1.63544	1865.8350
3/8	1.63378	1851.6885	1.63462	1858.8673	1.63546	1866.0600
13/32	1.63381	1851.9126	1.63465	1859.0919	1.63549	1866.2850
7/16	1.63384	1852.1367	1.63468	1859.3164	1.63552	1866.5100
15/32	1.63386	1852.3609	1.63470	1859.5410	1.63554	1866.7350
1/2	1.63389	1852.5851	1.63473	1859.7656	1.63557	1866.9601
17/32	1.63392	1852.8093	1.63476	1859.9902	1.63559	1867.1851
9/16	1.63394	1853.0334	1.63478	1860.2149	1.63562	1867.4102
19/32	1.63397	1853.2577	1.63481	1860.4395	1.63565	1867.6353
5/8	1.63399	1853.4819	1.63483	1860.6642	1.63567	1867.8604
21/32	1.63402	1853.7061	1.63486	1860.8888	1.63570	1868.0855
11/16	1.63405	1853.9304	1.63489	1861.1135	1.63572	1868.3106
23/32	1.63407	1854.1546	1.63491	1861.3382	1.63575	1868.5357
3/4	1.63410	1854.3789	1.63494	1861.5629	1.63578	1868.7609
25/32	1.63413	1854.6032	1.63497	1861.7877	1.63580	1868.9860
13/16	1.63415	1854.8275	1.63499	1862.0124	1.63583	1869.2112
27/32	1.63418	1855.0518	1.63502	1862.2371	1.63586	1869.4364
7/8	1.63420	1855.2761	1.63504	1862.4619	1.63588	1869.6616
29/32	1.63423	1855.5005	1.63507	1862.6867	1.63591	1869.8868
15/16	1.63426	1855.7249	1.63510	1862.9115	1.63593	1870.1120
31/32	1.63428	1855.9492	1.63512	1863.1363	1.63596	1870.3372
1	1.63431	1856.1736	1.63515	1863.3611	1.63599	1870.5625

43′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.63599	1870.5625	1.63682	1877.7778	1.63766	1885.0069
1/32	1.63601	1870.7878	1.63685	1878.0035	1.63768	1885.2331
1/16	1.63604	1871.0130	1.63687	1878.2292	1.63771	1885.4592
3/32	1.63606	1871.2383	1.63690	1878.4549	1.63773	1885.6854
⅛	1.63609	1871.4637	1.63693	1878.6807	1.63776	1885.9116
5/32	1.63612	1871.6890	1.63695	1878.9064	1.63779	1886.1378
3/16	1.63614	1871.9143	1.63698	1879.1322	1.63781	1886.3640
7/32	1.63617	1872.1397	1.63700	1879.3580	1.63784	1886.5902
¼	1.63620	1872.3650	1.63703	1879.5838	1.63786	1886.8164
9/32	1.63622	1872.5904	1.63706	1879.8096	1.63789	1887.0426
5/16	1.63625	1872.8158	1.63708	1880.0354	1.63792	1887.2689
11/32	1.63627	1873.0412	1.63711	1880.2612	1.63794	1887.4952
⅜	1.63630	1873.2666	1.63714	1880.4871	1.63797	1887.7215
13/32	1.63633	1873.4920	1.63716	1880.7130	1.63799	1887.9478
7/16	1.63635	1873.7175	1.63719	1880.9388	1.63802	1888.1741
15/32	1.63638	1873.9429	1.63721	1881.1647	1.63805	1888.4004
½	1.63640	1874.1684	1.63724	1881.3906	1.63807	1888.6267
17/32	1.63643	1874.3939	1.63727	1881.6165	1.63810	1888.8531
9/16	1.63646	1874.6194	1.63729	1881.8425	1.63813	1889.0795
19/32	1.63648	1874.8449	1.63732	1882.0684	1.63815	1889.3058
⅝	1.63651	1875.0704	1.63734	1882.2944	1.63818	1889.5322
21/32	1.63653	1875.2960	1.63737	1882.5204	1.63820	1889.7586
11/16	1.63656	1875.5215	1.63740	1882.7463	1.63823	1889.9851
23/32	1.63659	1875.7471	1.63742	1882.9723	1.63826	1890.2115
¾	1.63661	1875.9727	1.63745	1883.1984	1.63828	1890.4379
25/32	1.63664	1876.1982	1.63747	1883.4244	1.63831	1890.6644
13/16	1.63667	1876.4239	1.63750	1883.6504	1.63833	1890.8909
27/32	1.63669	1876.6495	1.63753	1883.8765	1.63836	1891.1174
⅞	1.63672	1876.8751	1.63755	1884.1025	1.63839	1891.3439
29/32	1.63674	1877.1008	1.63758	1884.3286	1.63841	1891.5704
15/16	1.63677	1877.3264	1.63760	1884.5547	1.63844	1891.7969
31/32	1.63680	1877.5521	1.63763	1884.7808	1.63846	1892.0234
1	1.63682	1877.7778	1.63766	1885.0069	1.63849	1892.2500

43′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.63849	1892.2500	1.63932	1899.5069	1.64015	1906.7778
1/32	1.63852	1892.4766	1.63935	1899.7339	1.64018	1907.0052
1/16	1.63854	1892.7032	1.63937	1899.9610	1.64020	1907.2327
3/32	1.63857	1892.9297	1.63940	1900.1880	1.64023	1907.4601
1/8	1.63859	1893.1564	1.63942	1900.4150	1.64025	1907.6876
5/32	1.63862	1893.3830	1.63945	1900.6421	1.64028	1907.9151
3/16	1.63865	1893.6096	1.63948	1900.8692	1.64031	1908.1426
7/32	1.63867	1893.8363	1.63950	1901.0963	1.64033	1908.3701
1/4	1.63870	1894.0629	1.63953	1901.3234	1.64036	1908.5977
9/32	1.63872	1894.2896	1.63955	1901.5505	1.64038	1908.8252
5/16	1.63875	1894.5163	1.63958	1901.7776	1.64041	1909.0528
11/32	1.63878	1894.7430	1.63961	1902.0047	1.64043	1909.2803
3/8	1.63880	1894.9697	1.63963	1902.2319	1.64046	1909.5079
13/32	1.63883	1895.1965	1.63966	1902.4590	1.64049	1909.7355
7/16	1.63885	1895.4232	1.63968	1902.6862	1.64051	1909.9631
15/32	1.63888	1895.6500	1.63971	1902.9134	1.64054	1910.1908
1/2	1.63891	1895.8767	1.63974	1903.1406	1.64056	1910.4184
17/32	1.63893	1896.1035	1.63976	1903.3678	1.64059	1910.6461
9/16	1.63896	1896.3303	1.63979	1903.5951	1.64062	1910.8737
19/32	1.63898	1896.5571	1.63981	1903.8223	1.64064	1911.1014
5/8	1.63901	1896.7840	1.63984	1904.0496	1.64067	1911.3291
21/32	1.63903	1897.0108	1.63987	1904.2769	1.64069	1911.5568
11/16	1.63906	1897.2377	1.63989	1904.5042	1.64072	1911.7845
23/32	1.63909	1897.4645	1.63992	1904.7315	1.64075	1912.0123
3/4	1.63911	1897.6914	1.63994	1904.9588	1.64077	1912.2400
25/32	1.63914	1897.9183	1.63997	1905.1861	1.64080	1912.4678
13/16	1.63916	1898.1452	1.63999	1905.4134	1.64082	1912.6956
27/32	1.63919	1898.3721	1.64002	1905.6408	1.64085	1912.9233
7/8	1.63922	1898.5991	1.64005	1905.8682	1.64087	1913.1512
29/32	1.63924	1898.8260	1.64007	1906.0955	1.64090	1913.3790
15/16	1.63927	1899.0530	1.64010	1906.3229	1.64093	1913.6068
31/32	1.63929	1899.2800	1.64012	1906.5504	1.64095	1913.8346
1	1.63932	1899.5069	1.64015	1906.7778	1.64098	1914.0625

43′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.64098	1914.0625	1.64180	1921.3611	1.64263	1928.6736
1⁄32	1.64100	1914.2904	1.64183	1921.5894	1.64266	1928.9024
1⁄16	1.64103	1914.5183	1.64186	1921.8177	1.64268	1929.1311
3⁄32	1.64106	1914.7462	1.64188	1922.0461	1.64271	1929.3599
⅛	1.64108	1914.9741	1.64191	1922.2744	1.64273	1929.5887
5⁄32	1.64111	1915.2020	1.64193	1922.5028	1.64276	1929.8174
3⁄16	1.64113	1915.4299	1.64196	1922.7311	1.64278	1930.0463
7⁄32	1.64116	1915.6579	1.64199	1922.9595	1.64281	1930.2751
¼	1.64118	1915.8859	1.64201	1923.1879	1.64284	1930.5039
9⁄32	1.64121	1916.1138	1.64204	1923.4163	1.64286	1930.7328
5⁄16	1.64124	1916.3418	1.64206	1923.6448	1.64289	1930.9616
11⁄32	1.64126	1916.5698	1.64209	1923.8732	1.64291	1931.1905
⅜	1.64129	1916.7979	1.64211	1924.1017	1.64294	1931.4194
13⁄32	1.64131	1917.0259	1.64214	1924.3301	1.64296	1931.6483
7⁄16	1.64134	1917.2539	1.64217	1924.5586	1.64299	1931.8772
15⁄32	1.64137	1917.4820	1.64219	1924.7871	1.64302	1932.1061
½	1.64139	1917.7101	1.64222	1925.0156	1.64304	1932.3351
17⁄32	1.64142	1917.9382	1.64224	1925.2441	1.64307	1932.5640
9⁄16	1.64144	1918.1663	1.64227	1925.4727	1.64309	1932.7930
19⁄32	1.64147	1918.3944	1.64229	1925.7012	1.64312	1933.0220
⅝	1.64149	1918.6225	1.64232	1925.9298	1.64314	1933.2510
21⁄32	1.64152	1918.8506	1.64235	1926.1584	1.64317	1933.4800
11⁄16	1.64155	1919.0788	1.64237	1926.3870	1.64320	1933.7090
23⁄32	1.64157	1919.3070	1.64240	1926.6156	1.64322	1933.9380
¾	1.64160	1919.5352	1.64242	1926.8442	1.64325	1934.1671
25⁄32	1.64162	1919.7634	1.64245	1927.0728	1.64327	1934.3962
13⁄16	1.64165	1919.9916	1.64247	1927.3015	1.64330	1934.6252
27⁄32	1.64168	1920.2198	1.64250	1927.5301	1.64332	1934.8543
⅞	1.64170	1920.4480	1.64253	1927.7588	1.64335	1935.0834
29⁄32	1.64173	1920.6763	1.64255	1927.9875	1.64338	1935.3126
15⁄16	1.64175	1920.9045	1.64258	1928.2162	1.64340	1935.5417
31⁄32	1.64178	1921.1328	1.64260	1928.4449	1.64343	1935.7708
1	1.64180	1921.3611	1.64263	1928.6736	1.64345	1936.0000

44′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.64345	1936.0000	1.64427	1943.3403	1.64509	1950.6944
1/32	1.64348	1936.2292	1.64430	1943.5699	1.64512	1950.9245
1/16	1.64350	1936.4584	1.64433	1943.7995	1.64515	1951.1545
3/32	1.64353	1936.6876	1.64435	1944.0291	1.64517	1951.3846
1/8	1.64356	1936.9168	1.64438	1944.2588	1.64520	1951.6147
5/32	1.64358	1937.1460	1.64440	1944.4885	1.64522	1951.8448
3/16	1.64361	1937.3752	1.64443	1944.7181	1.64525	1952.0749
7/32	1.64363	1937.6045	1.64445	1944.9478	1.64527	1952.3050
1/4	1.64366	1937.8338	1.64448	1945.1775	1.64530	1952.5352
9/32	1.64368	1938.0630	1.64451	1945.4072	1.64533	1952.7653
5/16	1.64371	1938.2923	1.64453	1945.6370	1.64535	1952.9955
11/32	1.64374	1938.5217	1.64456	1945.8667	1.64538	1953.2256
3/8	1.64376	1938.7510	1.64458	1946.0965	1.64540	1953.4558
13/32	1.64379	1938.9803	1.64461	1946.3262	1.64543	1953.6860
7/16	1.64381	1939.2097	1.64463	1946.5560	1.64545	1953.9163
15/32	1.64384	1939.4390	1.64466	1946.7858	1.64548	1954.1465
1/2	1.64386	1939.6684	1.64468	1947.0156	1.64550	1954.3767
17/32	1.64389	1939.8978	1.64471	1947.2454	1.64553	1954.6070
9/16	1.64392	1940.1272	1.64474	1947.4753	1.64556	1954.8373
19/32	1.64394	1940.3566	1.64476	1947.7051	1.64558	1955.0676
5/8	1.64397	1940.5860	1.64479	1947.9350	1.64561	1955.2979
21/32	1.64399	1940.8155	1.64481	1948.1649	1.64563	1955.5282
11/16	1.64402	1941.0449	1.64484	1948.3948	1.64566	1955.7585
23/32	1.64404	1941.2744	1.64486	1948.6247	1.64568	1955.9888
3/4	1.64407	1941.5039	1.64489	1948.8546	1.64571	1956.2192
25/32	1.64409	1941.7334	1.64492	1949.0845	1.64573	1956.4496
13/16	1.64412	1941.9629	1.64494	1949.3145	1.64576	1956.6799
27/32	1.64415	1942.1924	1.64497	1949.5444	1.64579	1956.9103
7/8	1.64417	1942.4220	1.64499	1949.7744	1.64581	1957.1407
29/32	1.64420	1942.6515	1.64502	1950.0044	1.64584	1957.3712
15/16	1.64422	1942.8811	1.64504	1950.2344	1.64586	1957.6016
31/32	1.64425	1943.1107	1.64507	1950.4644	1.64589	1957.8320
1	1.64427	1943.3403	1.64509	1950.6944	1.64591	1958.0625

44′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.64591	1958.0625	1.64673	1965.4444	1.64755	1972.8403
1/32	1.64594	1958.2930	1.64676	1965.6754	1.64757	1973.0716
1/16	1.64596	1958.5235	1.64678	1965.9063	1.64760	1973.3030
3/32	1.64599	1958.7540	1.64681	1966.1372	1.64762	1973.5343
⅛	1.64602	1958.9845	1.64683	1966.3682	1.64765	1973.7657
5/32	1.64604	1959.2150	1.64686	1966.5991	1.64767	1973.9971
3/16	1.64607	1959.4456	1.64688	1966.8301	1.64770	1974.2285
7/32	1.64609	1959.6761	1.64691	1967.0611	1.64772	1974.4600
¼	1.64612	1959.9067	1.64693	1967.2921	1.64775	1974.6914
9/32	1.64614	1960.1373	1.64696	1967.5231	1.64778	1974.9229
5/16	1.64617	1960.3679	1.64699	1967.7542	1.64780	1975.1543
11/32	1.64619	1960.5985	1.64701	1967.9852	1.64783	1975.3858
⅜	1.64622	1960.8291	1.64704	1968.2163	1.64785	1975.6173
13/32	1.64625	1961.0597	1.64706	1968.4473	1.64788	1975.8488
7/16	1.64627	1961.2904	1.64709	1968.6784	1.64790	1976.0803
15/32	1.64630	1961.5211	1.64711	1968.9095	1.64793	1976.3119
½	1.64632	1961.7517	1.64714	1969.1406	1.64795	1976.5434
17/32	1.64635	1961.9824	1.64716	1969.3718	1.64798	1976.7750
9/16	1.64637	1962.2131	1.64719	1969.6029	1.64800	1977.0065
19/32	1.64640	1962.4439	1.64721	1969.8340	1.64803	1977.2381
⅝	1.64642	1962.6746	1.64724	1970.0652	1.64805	1977.4697
21/32	1.64645	1962.9053	1.64727	1970.2964	1.64808	1977.7013
11/16	1.64648	1963.1361	1.64729	1970.5276	1.64811	1977.9330
23/32	1.64650	1963.3669	1.64732	1970.7588	1.64813	1978.1646
¾	1.64653	1963.5977	1.64734	1970.9900	1.64816	1978.3963
25/32	1.64655	1963.8285	1.64737	1971.2213	1.64818	1978.6279
13/16	1.64658	1964.0593	1.64739	1971.4525	1.64821	1978.8596
27/32	1.64660	1964.2901	1.64742	1971.6838	1.64823	1979.0913
⅞	1.64663	1964.5209	1.64744	1971.9150	1.64826	1979.3230
29/32	1.64665	1964.7518	1.64747	1972.1463	1.64828	1979.5547
15/16	1.64668	1964.9827	1.64750	1972.3776	1.64831	1979.7865
31/32	1.64670	1965.2135	1.64752	1972.6089	1.64833	1980.0182
1	1.64673	1965.4444	1.64755	1972.8403	1.64836	1980.2500

44′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.64836	1980.2500	1.64917	1987.6736	1.64998	1995.1111
1/32	1.64839	1980.4818	1.64920	1987.9058	1.65001	1995.3438
1/16	1.64841	1980.7136	1.64922	1988.1380	1.65003	1995.5764
3/32	1.64844	1980.9454	1.64925	1988.3703	1.65006	1995.8091
1/8	1.64846	1981.1772	1.64927	1988.6025	1.65008	1996.0418
5/32	1.64849	1981.4090	1.64930	1988.8348	1.65011	1996.2745
3/16	1.64851	1981.6409	1.64932	1989.0671	1.65014	1996.5072
7/32	1.64854	1981.8727	1.64935	1989.2994	1.65016	1996.7399
1/4	1.64856	1982.1046	1.64938	1989.5317	1.65019	1996.9727
9/32	1.64859	1982.3365	1.64940	1989.7640	1.65021	1997.2054
5/16	1.64861	1982.5684	1.64943	1989.9963	1.65024	1997.4382
11/32	1.64864	1982.8003	1.64945	1990 2287	1.65026	1997.6710
3/8	1.64866	1983.0322	1.64948	1990.4610	1.65029	1997.9038
13/32	1.64869	1983.2642	1.64950	1990.6934	1.65031	1998.1366
7/16	1.64872	1983.4961	1.64953	1990.9258	1.65034	1998.3694
15/32	1.64874	1983.7281	1.64955	1991.1582	1.65036	1998.6022
1/2	1.64877	1983.9601	1.64958	1991.3906	1.65039	1998.8351
17/32	1.64879	1984.1921	1.64960	1991.6231	1.65041	1999.0679
9/16	1.64882	1984.4241	1.64963	1991.8555	1.65044	1999.3008
19/32	1.64884	1984.6561	1.64965	1992.0880	1.65046	1999.5337
5/8	1.64887	1984.8881	1.64968	1992.3204	1.65049	1999.7666
21/32	1 64889	1985.1202	1.64970	1992.5529	1.65051	1999.9995
11/16	1.64892	1985.3522	1.64973	1992.7854	1.65054	2000.2324
23/32	1.64894	1985.5843	1.64976	1993.0179	1.65057	2000.4654
3/4	1.64897	1985.8164	1.64978	1993.2504	1.65059	2000.6984
25/32	1.64899	1986.0485	1.64981	1993.4830	1.65062	2000.9313
13/16	1.64902	1986.2806	1.64983	1993.7155	1.65064	2001.1643
27/32	1.64905	1986.5128	1.64986	1993.9481	1.65067	2001.3973
7/8	1.64907	1986.7449	1.64988	1994.1807	1.65069	2001.6303
29/32	1.64910	1986.9771	1.64991	1994.4133	1.65072	2001.8633
15/16	1.64912	1987.2092	1.64993	1994.6459	1.65074	2002.0964
31/32	1.64915	1987.4414	1.64996	1994.8785	1.65077	2002.3294
1	1.64917	1987.6736	1.64998	1995.1111	1.65079	2002.5625

44′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.65079	2002.5625	1.65160	2010.0278	1.65241	2017.5069
1/32	1.65082	2002.7956	1.65163	2010.2613	1.65243	2017.7409
1/16	1.65084	2003.0287	1.65165	2010.4948	1.65246	2017.9749
3/32	1.65087	2003.2618	1.65168	2010.7284	1.65248	2018.2088
1/8	1.65089	2003.4949	1.65170	2010.9619	1.65251	2018.4428
5/32	1.65092	2003.7280	1.65173	2011.1955	1.65253	2018.6768
3/16	1.65094	2003.9612	1.65175	2011.4291	1.65256	2018.9108
7/32	1.65097	2004.1943	1.65178	2011.6627	1.65258	2019.1449
1/4	1.65100	2004.4275	1.65180	2011.8963	1.65261	2019.3789
9/32	1.65102	2004.6607	1.65183	2012.1299	1.65263	2019.6130
5/16	1.65105	2004.8939	1.65185	2012.3635	1.65266	2019.8470
11/32	1.65107	2005.1271	1.65188	2012.5972	1.65268	2020.0811
3/8	1.65110	2005.3604	1.65190	2012.8308	1.65271	2020.3152
13/32	1.65112	2005.5936	1.65193	2013.0645	1.65273	2020.5493
7/16	1.65115	2005.8268	1.65195	2013.2982	1.65276	2020.7834
15/32	1.65117	2006.0601	1.65198	2013.5319	1.65279	2021.0176
1/2	1.65120	2006.2934	1.65200	2013.7656	1.65281	2021.2517
17/32	1.65122	2006.5267	1.65203	2013.9994	1.65284	2021.4859
9/16	1.65125	2006.7600	1.65205	2014.2331	1.65286	2021.7201
19/32	1.65127	2006.9933	1.65208	2014.4669	1.65289	2021.9543
5/8	1.65130	2007.2267	1.65211	2014.7006	1.65291	2022.1885
21/32	1.65132	2007.4600	1.65213	2014.9344	1.65294	2022.4227
11/16	1.65135	2007.6934	1.65216	2015.1682	1.65296	2022.6569
23/32	1.65137	2007.9268	1.65218	2015.4020	1.65299	2022.8912
3/4	1.65140	2008.1602	1.65221	2015.6359	1.65301	2023.1254
25/32	1.65142	2008.3936	1.65223	2015.8697	1.65304	2023.3597
13/16	1.65145	2008.6270	1.65226	2016.1035	1.65306	2023.5940
27/32	1.65147	2008.8604	1.65228	2016.3374	1.65309	2023.8283
7/8	1.65150	2009.0939	1.65231	2016.5713	1.65311	2024.0626
29/32	1.65153	2009.3273	1.65233	2016.8052	1.65314	2024.2969
15/16	1.65155	2009.5608	1.65236	2017.0391	1.65316	2024.5313
31/32	1.65158	2009.7943	1.65238	2017.2730	1.65319	2024.7656
1	1.65160	2010.0278	1.65241	2017.5069	1.65321	2025.0000

45′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.65321	2025.0000	1.65402	2032.5069	1.65482	2040.0278
1/32	1.65324	2025.2344	1.65404	2032.7418	1.65484	2040.2630
1/16	1.65326	2025.4688	1.65407	2032.9766	1.65487	2040.4983
3/32	1.65329	2025.7032	1.65409	2033.2114	1.65489	2040.7336
1/8	1.65331	2025.9376	1.65412	2033.4463	1.65492	2040.9689
5/32	1.65334	2026.1720	1.65414	2033.6812	1.65494	2041.2042
3/16	1.65336	2026.4065	1.65417	2033.9160	1.65497	2041.4395
7/32	1.65339	2026.6410	1.65419	2034.1509	1.65499	2041.6748
1/4	1.65341	2026.8754	1.65422	2034.3859	1.65502	2041.9102
9/32	1.65344	2027.1099	1.65424	2034.6208	1.65504	2042.1455
5/16	1.65346	2027.3444	1.65427	2034.8557	1.65507	2042.3809
11/32	1.65349	2027.5789	1.65429	2035.0907	1.65509	2042.6163
3/8	1.65351	2027.8135	1.65432	2035.3256	1.65512	2042.8517
13/32	1.65354	2028.0480	1.65434	2035.5606	1.65514	2043.0871
7/16	1.65356	2028.2826	1.65437	2035.7956	1.65517	2043.3225
15/32	1.65359	2028.5172	1.65439	2036.0306	1.65519	2043.5579
1/2	1.65361	2028.7517	1.65442	2036.2656	1.65522	2043.7934
17/32	1.65364	2028.9863	1.65444	2036.5007	1.65524	2044.0289
9/16	1.65366	2029.2209	1.65447	2036.7357	1.65527	2044.2644
19/32	1.65369	2029.4556	1.65449	2036.9708	1.65529	2044.4998
5/8	1.65371	2029.6902	1.65452	2037.2058	1.65532	2044.7354
21/32	1.65374	2029.9249	1.65454	2037.4409	1.65534	2044.9709
11/16	1.65377	2030.1595	1.65457	2037.6760	1.65537	2045.2064
23/32	1.65379	2030.3942	1.65459	2037.9111	1.65539	2045.4420
3/4	1.65382	2030.6289	1.65462	2038.1463	1.65542	2045.6775
25/32	1.65384	2030.8636	1.65464	2038.3814	1.65544	2045.9131
13/16	1.65387	2031.0983	1.65467	2038.6166	1.65547	2046.1487
27/32	1.65389	2031.3331	1.65469	2038.8517	1.65549	2046.3843
7/8	1.65392	2031.5678	1.65472	2039.0869	1.65552	2046.6199
29/32	1.65394	2031.8026	1.65474	2039.3221	1.65554	2046.8555
15/16	1.65397	2032.0374	1.65477	2039.5573	1.65557	2047.0912
31/32	1.65399	2032.2721	1.65479	2039.7925	1.65559	2047.3268
1	1.65402	2032.5069	1.65482	2040.0278	1.65562	2047.5625

45'

Fractions of an Inch.	3"		4"		5"	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.65562	2047.5625	1.65642	2055.1111	1.65722	2062.6736
1/32	1.65564	2047.7982	1.65644	2055.3472	1.65724	2062.9102
1/16	1.65567	2048.0339	1.65647	2055.5834	1.65727	2063.1467
3/32	1.65569	2048.2696	1.65649	2055.8195	1.65729	2063.3833
1/8	1.65572	2048.5053	1.65652	2056.0557	1.65731	2063.6199
5/32	1.65574	2048.7411	1.65654	2056.2918	1.65734	2063.8565
3/16	1.65577	2048.9768	1.65657	2056.5280	1.65736	2064.0931
7/32	1.65579	2049.2126	1.65659	2056.7642	1.65739	2064.3298
1/4	1.65582	2049.4484	1.65662	2057.0004	1.65741	2064.5664
9/32	1.65584	2049.6841	1.65664	2057.2367	1.65744	2064.8031
5/16	1.65587	2049.9199	1.65667	2057.4729	1.65746	2065.0397
11/32	1.65589	2050.1558	1.65669	2057.7092	1.65749	2065.2764
3/8	1.65592	2050.3916	1.65672	2057.9454	1.65751	2065.5131
13/32	1.65594	2050.6274	1.65674	2058.1817	1.65754	2065.7498
7/16	1.65597	2050.8633	1.65677	2058.4180	1.65756	2065.9866
15/32	1.65599	2051.0992	1.65679	2058.6543	1.65759	2066.2233
1/2	1.65602	2051.3351	1.65682	2058.8906	1.65761	2066.4601
17/32	1.65604	2051.5710	1.65684	2059.1270	1.65764	2066.6968
9/16	1.65607	2051.8069	1.65687	2059.3633	1.65766	2066.9336
19/32	1.65609	2052.0428	1.65689	2059.5997	1.65769	2067.1704
5/8	1.65612	2052.2788	1.65692	2059.8360	1.65771	2067.4072
21/32	1.65614	2052.5147	1.65694	2060.0724	1.65774	2067.6440
11/16	1.65617	2052.7507	1.65697	2060.3088	1.65776	2067.8809
23/32	1.65619	2052.9867	1.65699	2060.5453	1.65779	2068.1177
3/4	1.65622	2053.2227	1.65702	2060.7817	1.65781	2068.3546
25/32	1.65624	2053.4587	1.65704	2061.0181	1.65784	2068.5915
13/16	1.65627	2053.6947	1.65707	2061.2546	1.65786	2068.8284
27/32	1.65629	2053.9307	1.65709	2061.4911	1.65789	2069.0653
7/8	1.65632	2054.1668	1.65712	2061.7275	1.65791	2069.3022
29/32	1.65634	2054.4028	1.65714	2061.9640	1.65794	2069.5391
15/16	1.65637	2054.6389	1.65717	2062.2005	1.65796	2069.7761
31/32	1.65639	2054.8750	1.65719	2062.4371	1.65799	2070.0130
1	1.65642	2055.1111	1.65722	2062.6736	1.65801	2070.2500

45′

Fractions of an inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.65801	2070.2500	1.65881	2077.8403	1.65960	2085.4444
1/32	1.65804	2070.4870	1.65883	2078.0777	1.65962	2085.6823
1/16	1.65806	2070.7240	1.65886	2078.3151	1.65965	2085.9202
3/32	1.65809	2070.9610	1.65888	2078.5526	1.65967	2086.1580
1/8	1.65811	2071.1980	1.65891	2078.7900	1.65970	2086.3959
5/32	1.65814	2071.4351	1.65893	2079.0275	1.65972	2086.6338
3/16	1.65816	2071.6721	1.65895	2079.2650	1.65975	2086.8718
7/32	1.65819	2071.9092	1.65898	2079.5025	1.65977	2087.1097
1/4	1.65821	2072.1463	1.65900	2079.7400	1.65980	2087.3477
9/32	1.65824	2072.3834	1.65903	2079.9775	1.65982	2087.5856
5/16	1.65826	2072.6205	1.65905	2080.2151	1.65985	2087.8236
11/32	1.65828	2072.8576	1.65908	2080.4526	1.65987	2088.0616
3/8	1.65831	2073.0947	1.65910	2080.6902	1.65990	2088.2996
13/32	1.65833	2073.3319	1.65913	2080.9278	1.65992	2088.5376
7/16	1.65836	2073.5690	1.65915	2081.1654	1.65995	2088.7756
15/32	1.65838	2073.8062	1.65918	2081.4030	1.65997	2089.0137
1/2	1.65841	2074.0434	1.65920	2081.6406	1.66000	2089.2517
17/32	1.65843	2074.2806	1.65923	2081.8783	1.66002	2089.4898
9/16	1.65846	2074.5178	1.65925	2082.1159	1.66004	2089.7279
19/32	1.65848	2074.7551	1.65928	2082.3536	1.66007	2089.9660
5/8	1.65851	2074.9923	1.65930	2082.5913	1.66009	2090.2041
21/32	1.65853	2075.2296	1.65933	2082.8289	1.66012	2090.4422
11/16	1.65856	2075.4668	1.65935	2083.0667	1.66014	2090.6804
23/32	1.65858	2075.7041	1.65938	2083.3044	1.66017	2090.9185
3/4	1.65861	2075.9414	1.65940	2083.5421	1.66019	2091.1567
25/32	1.65863	2076.1787	1.65943	2083.7798	1.66022	2091.3949
13/16	1.65866	2076.4160	1.65945	2084.0176	1.66024	2091.6331
27/32	1.65868	2076.6534	1.65948	2084.2554	1.66027	2091.8713
7/8	1.65871	2076.8907	1.65950	2084.4932	1.66029	2092.1095
29/32	1.65873	2077.1281	1.65953	2084.7310	1.66032	2092.3477
15/16	1.65876	2077.3655	1.65955	2084.9688	1.66034	2092.5860
31/32	1.65878	2077.6029	1.65957	2085.2066	1.66037	2092.8242
1	1.65881	2077.8403	1.65960	2085.4444	1.66039	2093.0625

45′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.66039	2093.0625	1.66118	2100.6944	1.66197	2108.3403
1/32	1.66042	2093.3008	1.66121	2100.9332	1.66199	2108.5794
1/16	1.66044	2093.5391	1.66123	2101.1719	1.66202	2108.8186
3/32	1.66047	2093.7774	1.66126	2101.4107	1.66204	2109.0578
1/8	1.66049	2094.0157	1.66128	2101.6494	1.66207	2109.2970
5/32	1.66051	2094.2541	1.66130	2101.8882	1.66209	2109.5362
3/16	1.66054	2094.4924	1.66133	2102.1270	1.66212	2109.7754
7/32	1.66056	2094.7308	1.66135	2102.3658	1.66214	2110.0147
1/4	1.66059	2094.9692	1.66138	2102.6046	1.66217	2110.2539
9/32	1.66061	2095.2076	1.66140	2102.8434	1.66219	2110.4932
5/16	1.66064	2095.4460	1.66143	2103.0823	1.66222	2110.7324
11/32	1.66066	2095.6844	1.66145	2103.3211	1.66224	2110.9717
3/8	1.66069	2095.9229	1.66148	2103.5600	1.66227	2111.2110
13/32	1.66071	2096.1613	1.66150	2103.7989	1.66229	2111.4504
7/16	1.66074	2096.3998	1.66153	2104.0378	1.66232	2111.6897
15/32	1.66076	2096.6382	1.66155	2104.2767	1.66234	2111.9290
1/2	1.66079	2096.8767	1.66158	2104.5156	1.66236	2112.1684
17/32	1.66081	2097.1152	1.66160	2104.7546	1.66239	2112.4078
9/16	1.66084	2097.3538	1.66163	2104.9935	1.66241	2112.6472
19/32	1.66086	2097.5923	1.66165	2105.2325	1.66244	2112.8866
5/8	1.66089	2097.8308	1.66167	2105.4715	1.66246	2113.1260
21/32	1.66091	2098.0694	1.66170	2105.7105	1.66249	2113.3654
11/16	1.66093	2098.3080	1.66172	2105.9495	1.66251	2113.6048
23/32	1.66096	2098.5466	1.66175	2106.1885	1.66254	2113.8443
3/4	1.66098	2098.7852	1.66177	2106.4275	1.66256	2114.0838
25/32	1.66101	2099.0238	1.66180	2106.6666	1.66259	2114.3232
13/16	1.66103	2099.2624	1.66182	2106.9056	1.66261	2114.5627
27/32	1.66106	2099.5010	1.66185	2107.1447	1.66263	2114.8023
7/8	1.66108	2099.7397	1.66187	2107.3838	1.66266	2115.0418
29/32	1.66111	2099.9784	1.66190	2107.6229	1.66268	2115.2813
15/16	1.66113	2100.2170	1.66192	2107.8620	1.66271	2115.5209
31/32	1.66116	2100.4557	1.66195	2108.1011	1.66273	2115.7604
1	1.66118	2100.6944	1.66197	2108.3403	1.66276	2116.0000

46′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.66276	2116.0000	1.66354	2123.6736	1.66433	2131.3611
1/32	1.66278	2116.2396	1.66357	2123.9136	1.66435	2131.6016
1/16	1.66281	2116.4792	1.66359	2124.1537	1.66438	2131.8420
3/32	1.66283	2116.7188	1.66362	2124.3937	1.66440	2132.0825
1/8	1.66286	2116.9584	1.66364	2124.6338	1.66443	2132.3230
5/32	1.66288	2117.1981	1.66367	2124.8739	1.66445	2132.5635
3/16	1.66291	2117.4377	1.66369	2125.1140	1.66448	2132.8041
7/32	1.66293	2117.6774	1.66372	2125.3541	1.66450	2133.0446
1/4	1.66295	2117.9171	1.66374	2125.5942	1.66452	2133.2852
9/32	1.66298	2118.1568	1.66376	2125.8343	1.66455	2133.5257
5/16	1.66300	2118.3965	1.66379	2126.0745	1.66457	2133.7663
11/32	1.66303	2118.6362	1.66381	2126.3146	1.66460	2134.0069
3/8	1.66305	2118.8760	1.66384	2126.5548	1.66462	2134.2475
13/32	1.66308	2119.1157	1.66386	2126.7950	1.66465	2134.4881
7/16	1.66310	2119.3555	1.66389	2127.0352	1.66467	2134.7288
15/32	1.66313	2119.5953	1.66391	2127.2754	1.66470	2134.9694
1/2	1.66315	2119.8351	1.66394	2127.5156	1.66472	2135.2101
17/32	1.66318	2120.0749	1.66396	2127.7559	1.66474	2135.4507
9/16	1.66320	2120.3147	1.66399	2127.9961	1.66477	2135.6914
19/32	1.66322	2120.5545	1.66401	2128.2364	1.66479	2135.9321
5/8	1.66325	2120.7944	1.66403	2128.4767	1.66482	2136.1729
21/32	1.66327	2121.0342	1.66406	2128.7170	1.66484	2136.4136
11/16	1.66330	2121.2741	1.66408	2128.9573	1.66487	2136.6543
23/32	1.66332	2121.5140	1.66411	2129.1976	1.66489	2136.8951
3/4	1.66335	2121.7539	1.66413	2129.4379	1.66492	2137.1359
25/32	1.66337	2121.9938	1.66416	2129.6783	1.66494	2137.3766
13/16	1.66340	2122.2338	1.66418	2129.9186	1.66496	2137.6174
27/32	1.66342	2122.4737	1.66421	2130.1590	1.66499	2137.8582
7/8	1.66345	2122.7136	1.66423	2130.3994	1.66501	2138.0991
29/32	1.66347	2122.9536	1.66426	2130.6398	1.66504	2138.3399
15/16	1.66349	2123.1936	1.66428	2130.8802	1.66506	2138.5808
31/32	1.66352	2123.4336	1.66430	2131.1207	1.66509	2138.8216
1	1.66354	2123.6736	1.66433	2131.3611	1.66511	2139.0625

46′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.66511	2139.0625	1.66589	2146.7778	1.66667	2154.5069
1/32	1.66514	2139.3034	1.66592	2147.0191	1.66670	2154.7487
1/16	1.66516	2139.5443	1.66594	2147.2604	1.66672	2154.9905
3/32	1.66519	2139.7852	1.66597	2147.5018	1.66675	2155.2323
1/8	1.66521	2140.0262	1.66599	2147.7432	1.66677	2155.4741
5/32	1.66523	2140.2671	1.66602	2147.9845	1.66680	2155.7159
3/16	1.66526	2140.5081	1.66604	2148.2259	1.66682	2155.9577
7/32	1.66528	2140.7490	1.66606	2148.4673	1.66684	2156.1996
1/4	1.66531	2140.9900	1.66609	2148.7088	1.66687	2156.4414
9/32	1.66533	2141.2310	1.66611	2148.9502	1.66689	2156.6833
5/16	1.66536	2141.4720	1.66614	2149.1917	1.66692	2156.9252
11/32	1.66538	2141.7131	1.66616	2149.4331	1.66694	2157.1671
3/8	1.66541	2141.9541	1.66619	2149.6746	1.66697	2157.4090
13/32	1.66543	2142.1952	1.66621	2149.9161	1.66699	2157.6509
7/16	1.66545	2142.4362	1.66624	2150.1576	1.66701	2157.8928
15/32	1.66548	2142.6773	1.66626	2150.3991	1.66704	2158.1348
1/2	1.66550	2142.9184	1.66628	2150.6406	1.66706	2158.3767
17/32	1.66553	2143.1595	1.66631	2150.8822	1.66709	2158.6187
9/16	1.66555	2143.4006	1.66633	2151.1237	1.66711	2158.8607
19/32	1.66558	2143.6418	1.66636	2151.3653	1.66714	2159.1027
5/8	1.66560	2143.8829	1.66638	2151.6069	1.66716	2159.3447
21/32	1.66562	2144.1241	1.66641	2151.8485	1.66719	2159.5868
11/16	1.66565	2144.3653	1.66643	2152.0901	1.66721	2159.8288
23/32	1.66567	2144.6065	1.66645	2152.3317	1.66723	2160.0709
3/4	1.66570	2144.8477	1.66648	2152.5734	1.66726	2160.3129
25/32	1.66572	2145.0889	1.66650	2152.8150	1.66728	2160.5550
13/16	1.66575	2145.3301	1.66653	2153.0567	1.66731	2160.7971
27/32	1.66577	2145.5713	1.66655	2153.2983	1.66733	2161.0392
7/8	1.66580	2145.8126	1.66658	2153.5400	1.66736	2161.2814
29/32	1.66582	2146.0539	1.66660	2153.7817	1.66738	2161.5235
15/16	1.66584	2146.2952	1.66663	2154.0235	1.66740	2161.7657
31/32	1.66587	2146.5365	1.66665	2154.2652	1.66743	2162.0078
1	1.66589	2146.7778	1.66667	2154.5069	1.66745	2162.2500

46′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.66745	2162.2500	1.66823	2170.0069	1.66901	2177.7778
1⁄32	1.66748	2162.4922	1.66825	2170.2496	1.66903	2178.0208
1⁄16	1.66750	2162.7344	1.66828	2170.4922	1.66906	2178.2639
3⁄32	1.66753	2162.9766	1.66830	2170.7349	1.66908	2178.5070
⅛	1.66755	2163.2189	1.66833	2170.9775	1.66910	2178.7501
5⁄32	1.66757	2163.4611	1.66835	2171.2202	1.66913	2178.9932
3⁄16	1.66760	2163.7034	1.66838	2171.4629	1.66915	2179.2364
7⁄32	1.66762	2163.9456	1.66840	2171.7056	1.66918	2179.4795
¼	1.66765	2164.1879	1.66842	2171.9484	1.66920	2179.7227
9⁄32	1.66767	2164.4302	1.66845	2172.1911	1.66922	2179.9658
5⁄16	1.66770	2164.6726	1.66847	2172.4338	1.66925	2180.2090
11⁄32	1.66772	2164.9149	1.66850	2172.6766	1.66927	2180.4522
⅜	1.66774	2165.1572	1.66852	2172.9194	1.66930	2180.6954
13⁄32	1.66777	2165.3996	1.66855	2173.1622	1.66932	2180.9386
7⁄16	1.66779	2165.6420	1.66857	2173.4050	1.66935	2181.1819
15⁄32	1.66782	2165.8843	1.66859	2173.6478	1.66937	2181.4251
½	1.66784	2166.1267	1.66862	2173.8906	1.66939	2181.6684
17⁄32	1.66787	2166.3691	1.66864	2174.1335	1.66942	2181.9117
9⁄16	1.66789	2166.6116	1.66867	2174.3763	1.66944	2182.1550
19⁄32	1.66791	2166.8540	1.66869	2174.6192	1.66947	2182.3983
⅝	1.66794	2167.0965	1.66872	2174.8621	1.66949	2182.6416
21⁄32	1 66796	2167.3389	1.66874	2175.1050	1.66952	2182.8849
11⁄16	1.66799	2167.5814	1.66876	2175.3479	1.66954	2183.1283
23⁄32	1.66801	2167.8239	1.66879	2175.5908	1.66956	2183.3716
¾	1.66804	2168.0664	1.66881	2175.8338	1.66959	2183.6150
25⁄32	1.66806	2168.3089	1.66884	2176.0767	1.66961	2183.8584
13⁄16	1.66808	2168.5515	1.66886	2176.3197	1.66964	2184.1018
27⁄32	1.66811	2168.7940	1.66889	2176.5627	1.66966	2184.3452
⅞	1.66813	2169.0366	1.66891	2176.8057	1.66968	2184.5887
29⁄32	1.66816	2169.2791	1.66893	2177.0487	1.66971	2184.8321
15⁄16	1.66818	2169.5217	1.66896	2177.2917	1.66973	2185.0755
31⁄32	1.66821	2169.7643	1.66898	2177.5347	1.66976	2185.3190
1	1.66823	2170.0069	1.66901	2177.7778	1.66978	2185.5625

46′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.66978	2185.5625	1.67056	2193.3611	1.67133	2201.1736
1/32	1.66981	2185.8060	1.67058	2193.6050	1.67135	2201.4180
1/16	1.66983	2186.0495	1.67060	2193.8490	1.67138	2201.6624
3/32	1.66985	2186.2930	1.67063	2194.0929	1.67140	2201.9067
1/8	1.66988	2186.5366	1.67065	2194.3369	1.67142	2202.1512
5/32	1.66990	2186.7801	1.67068	2194.5809	1.67145	2202.3956
3/16	1.66993	2187.0237	1.67070	2194.8249	1.67147	2202.6400
7/32	1.66995	2187.2673	1.67072	2195.0689	1.67150	2202.8844
1/4	1.66998	2187.5109	1.67075	2195.3129	1.67152	2203.1289
9/32	1.67000	2187.7545	1.67077	2195.5570	1.67154	2203.3734
5/16	1.67002	2187.9981	1.67080	2195.8010	1.67157	2203.6179
11/32	1.67005	2188.2417	1.67082	2196.0451	1.67159	2203.8624
3/8	1.67007	2188.4854	1.67084	2196.2892	1.67162	2204.1069
13/32	1.67010	2188.7290	1.67087	2196.5333	1.67164	2204.3514
7/16	1.67012	2188.9727	1.67089	2196.7774	1.67166	2204.5959
15/32	1.67014	2189.2164	1.67092	2197.0215	1.67169	2204.8405
1/2	1.67017	2189.4601	1.67094	2197.2656	1.67171	2205.0851
17/32	1.67019	2189.7038	1.67097	2197.5098	1.67174	2205.3297
9/16	1.67022	2189.9475	1.67099	2197.7539	1.67176	2205.5742
19/32	1.67024	2190.1913	1.67101	2197.9981	1.67178	2205.8189
5/8	1.67027	2190.4350	1.67104	2198.2423	1.67181	2206.0635
21/32	1.67029	2190.6788	1.67106	2198.4865	1.67183	2206.3081
11/16	1.67031	2190.9226	1.67109	2198.7307	1.67186	2206.5528
23/32	1.67034	2191.1663	1.67111	2198.9749	1.67188	2206.7974
3/4	1.67036	2191.4102	1.67113	2199.2192	1.67191	2207.0421
25/32	1.67039	2191.6540	1.67116	2199.4634	1.67193	2207.2868
13/16	1.67041	2191.8978	1.67118	2199.7077	1.67195	2207.5315
27/32	1.67043	2192.1417	1.67121	2199.9520	1.67198	2207.7762
7/8	1.67046	2192.3855	1.67123	2200.1963	1.67200	2208.0209
29/32	1.67048	2192.6294	1.67125	2200.4406	1.67203	2208.2657
15/16	1.67051	2192.8733	1.67128	2200.6849	1.67205	2208.5104
31/32	1.67053	2193.1172	1.67130	2200.9293	1.67207	2208.7552
1	1.67056	2193.3611	1.67133	2201.1736	1.67210	2209.0000

47′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.67210	2209.0000	1.67287	2216.8403	1.67364	2224.6944
1/32	1.67212	2209.2448	1.67289	2217.0855	1.67366	2224.9401
1/16	1.67215	2209.4896	1.67292	2217.3308	1.67368	2225.1858
3/32	1.67217	2209.7344	1.67294	2217.5760	1.67371	2225.4315
⅛	1.67219	2209.9793	1.67296	2217.8213	1.67373	2225.6772
5/32	1.67222	2210.2241	1.67299	2218.0666	1.67376	2225.9229
3/16	1.67224	2210.4690	1.67301	2218.3119	1.67378	2226.1686
7/32	1.67227	2210.7139	1.67304	2218.5572	1.67380	2226.4144
¼	1.67229	2210.9588	1.67306	2218.8025	1.67383	2226.6602
9/32	1.67231	2211.2037	1.67308	2219.0479	1.67385	2226.9059
5/16	1.67234	2211.4486	1.67311	2219.2932	1.67387	2227.1517
11/32	1.67236	2211.6935	1.67313	2219.5386	1.67390	2227.3975
⅜	1.67239	2211.9385	1.67316	2219.7840	1.67392	2227.6433
13/32	1.67241	2212.1834	1.67318	2220.0294	1.67395	2227.8892
7/16	1.67243	2212.4284	1.67320	2220.2748	1.67397	2228.1350
15/32	1.67246	2212.6734	1.67323	2220.5202	1.67399	2228.3809
½	1.67248	2212.9184	1.67325	2220.7656	1.67402	2228.6267
17/32	1.67251	2213.1634	1.67328	2221.0111	1.67404	2228.8726
9/16	1.67253	2213.4084	1.67330	2221.2565	1.67407	2229.1185
19/32	1.67255	2213.6535	1.67332	2221.5020	1.67409	2229.3644
⅝	1.67258	2213.8985	1.67335	2221.7475	1.67411	2229.6104
21/32	1.67260	2214.1436	1.67337	2221.9930	1.67414	2229.8563
11/16	1.67263	2214.3887	1.67340	2222.2385	1.67416	2230.1022
23/32	1.67265	2214.6338	1.67342	2222.4841	1.67419	2230.3482
¾	1.67267	2214.8789	1.67344	2222.7296	1.67421	2230.5942
25/32	1.67270	2215.1240	1.67347	2222.9752	1.67423	2230.8402
13/16	1.67272	2215.3692	1.67349	2223.2207	1.67426	2231.0862
27/32	1.67275	2215.6143	1.67352	2223.4663	1.67428	2231.3322
⅞	1.67277	2215.8595	1.67354	2223.7119	1.67431	2231.5782
29/32	1.67280	2216.1047	1.67356	2223.9575	1.67433	2231.8243
15/16	1.67282	2216.3499	1.67359	2224.2032	1.67435	2232.0703
31/32	1.67284	2216.5951	1.67361	2224.4488	1.67438	2232.3164
1	1.67287	2216.8403	1.67364	2224.6944	1.67440	2232.5625

47'

Fractions of an Inch.	3"		4"		5"	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.67440	2232.5625	1.67517	2240.4444	1.67593	2248.3403
1/32	1.67443	2232.8086	1.67519	2240.6910	1.67595	2248.5872
1/16	1.67445	2233.0547	1.67521	2240.9375	1.67598	2248.8342
3/32	1.67447	2233.3008	1.67524	2241.1841	1.67600	2249.0812
1/8	1.67450	2233.5470	1.67526	2241.4307	1.67603	2249.3282
5/32	1.67452	2233.7931	1.67529	2241.6773	1.67605	2249.5753
3/16	1.67455	2234.0393	1.67531	2241.9239	1.67607	2249.8223
7/32	1.67457	2234.2855	1.67533	2242.1705	1.67610	2250.0693
1/4	1.67459	2234.5317	1.67536	2242.4171	1.67612	2250.3164
9/32	1.67462	2234.7779	1.67538	2242.6637	1.67615	2250.5635
5/16	1.67464	2235.0241	1.67541	2242.9104	1.67617	2250.8106
11/32	1.67467	2235.2704	1.67543	2243.1571	1.67619	2251.0577
3/8	1.67469	2235.5166	1.67545	2243.4038	1.67622	2251.3048
13/32	1.67471	2235.7629	1.67548	2243.6505	1.67624	2251.5519
7/16	1.67474	2236.0091	1.67550	2243.8972	1.67626	2251.7991
15/32	1.67476	2236.2554	1.67553	2244.1439	1.67629	2252.0462
1/2	1.67478	2236.5017	1.67555	2244.3906	1.67631	2252.2934
17/32	1.67481	2236.7481	1.67557	2244.6374	1.67634	2252.5406
9/16	1.67483	2236.9944	1.67560	2244.8841	1.67636	2252.7878
19/32	1.67486	2237.2407	1.67562	2245.1309	1.67638	2253.0350
5/8	1.67488	2237.4871	1.67564	2245.3777	1.67641	2253.2822
21/32	1.67490	2237.7335	1.67567	2245.6245	1.67643	2253.5295
11/16	1.67493	2237.9798	1.67569	2245.8713	1.67646	2253.7767
23/32	1.67495	2238.2262	1.67572	2246.1182	1.67648	2254.0240
3/4	1.67498	2238.4727	1.67574	2246.3650	1.67650	2254.2713
25/32	1.67500	2238.7191	1.67576	2246.6119	1.67653	2254.5186
13/16	1.67502	2238.9655	1.67579	2246.8588	1.67655	2254.7659
27/32	1.67505	2239.2120	1.67581	2247.1056	1.67657	2255.0132
7/8	1.67507	2239.4584	1.67584	2247.3525	1.67660	2255.2605
29/32	1.67510	2239.7049	1.67586	2247.5995	1.67662	2255.5079
15/16	1.67512	2239.9514	1.67588	2247.8464	1.67665	2255.7552
31/32	1.67514	2240.1979	1.67591	2248.0933	1.67667	2256.0026
1	1.67517	2240.4444	1.67593	2248.3403	1.67669	2256.2500

47′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.67669	2256.2500	1.67745	2264.1736	1.67821	2272.1111
1/32	1.67672	2256.4974	1.67748	2264.4214	1.67824	2272.3594
1/16	1.67674	2256.7448	1.67750	2264.6693	1.67826	2272.6077
3/32	1.67677	2256.9922	1.67753	2264.9172	1.67829	2272.8560
1/8	1.67679	2257.2397	1.67755	2265.1650	1.67831	2273.1043
5/32	1.67681	2257.4871	1.67757	2265.4129	1.67833	2273.3526
3/16	1.67684	2257.7346	1.67760	2265.6608	1.67836	2273.6009
7/32	1.67686	2257.9821	1.67762	2265.9088	1.67838	2273.8493
1/4	1.67688	2258.2296	1.67764	2266.1567	1.67840	2274.0977
9/32	1.67691	2258.4771	1.67767	2266.4046	1.67843	2274.3460
5/16	1.67693	2258.7246	1.67769	2266.6526	1.67845	2274.5944
11/32	1.67696	2258.9722	1.67772	2266.9006	1.67848	2274.8428
3/8	1.67698	2259.2197	1.67774	2267.1485	1.67850	2275.0913
13/32	1.67700	2259.4673	1.67776	2267.3965	1.67852	2275.3397
7/16	1.67703	2259.7149	1.67779	2267.6446	1.67855	2275.5881
15/32	1.67705	2259.9625	1.67781	2267.8926	1.67857	2275.8366
1/2	1.67707	2260.2101	1.67783	2268.1406	1.67859	2276.0851
17/32	1.67710	2260.4577	1.67786	2268.3887	1.67862	2276.3336
9/16	1.67712	2260.7053	1.67788	2268.6367	1.67864	2276.5821
19/32	1.67715	2260.9530	1.67791	2268.8848	1.67867	2276.8306
5/8	1.67717	2261.2006	1.67793	2269.1329	1.67869	2277.0791
21/32	1 67719	2261.4483	1.67795	2269.3810	1.67871	2277.3276
11/16	1.67722	2261.6960	1.67798	2269.6292	1.67874	2277.5762
23/32	1.67724	2261.9437	1.67800	2269.8773	1.67876	2277.8248
3/4	1.67726	2262.1914	1.67802	2270.1254	1.67878	2278.0734
25/32	1.67729	2262.4391	1.67805	2270.3736	1.67881	2278.3219
13/16	1.67731	2262.6869	1.67807	2270.6218	1.67883	2278.5706
27/32	1.67734	2262.9346	1.67810	2270.8700	1.67885	2278.8192
7/8	1.67736	2263.1824	1.67812	2271.1182	1.67888	2279.0678
29/32	1.67738	2263.4302	1.67814	2271.3664	1.67890	2279.3165
15/16	1.67741	2263.6780	1.67817	2271.6146	1.67893	2279.5651
31/32	1.67743	2263.9258	1.67819	2271.8629	1.67895	2279.8138
1	1.67745	2264.1736	1.67821	2272.1111	1.67897	2280.0625

47′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.67897	2280.0625	1.67973	2288.0278	1.68049	2296.0069
1/32	1.67900	2280.3112	1.67975	2288.2769	1.68051	2296.2565
1/16	1.67902	2280.5599	1.67978	2288.5261	1.68053	2296.5061
3/32	1.67904	2280.8087	1.67980	2288.7752	1.68056	2296.7557
⅛	1.67907	2281.0574	1.67983	2289.0244	1.68058	2297.0053
5/32	1.67909	2281.3062	1.67985	2289.2736	1.68060	2297.2549
3/16	1.67912	2281.5549	1.67987	2289.5228	1.68063	2297.5046
7/32	1.67914	2281.8037	1.67990	2289.7720	1.68065	2297.7542
¼	1.67916	2282.0525	1.67992	2290.0213	1.68068	2298.0039
9/32	1.67919	2282.3013	1.67994	2290.2705	1.68070	2298.2536
5/16	1.67921	2282.5502	1.67997	2290.5198	1.68072	2298.5033
11/32	1.67923	2282.7990	1.67999	2290.7690	1.68075	2298.7530
⅜	1.67926	2283.0479	1.68001	2291.0183	1.68077	2299.0027
13/32	1.67928	2283.2967	1.68004	2291.2676	1.68079	2299.2524
7/16	1.67930	2283.5456	1.68006	2291.5170	1.68082	2299.5022
15/32	1.67933	2283.7945	1.68009	2291.7663	1.68084	2299.7520
½	1.67935	2284.0434	1.68011	2292.0156	1.68086	2300.0017
17/32	1.67938	2284.2923	1.68013	2292.2650	1.68089	2300.2515
9/16	1.67940	2284.5413	1.68016	2292.5144	1.68091	2300.5013
19/32	1.67942	2284.7902	1.68018	2292.7637	1.68093	2300.7511
⅝	1.67945	2285.0392	1.68020	2293.0131	1.68096	2301.0010
21/32	1.67947	2285.2881	1.68023	2293.2625	1.68098	2301.2508
11/16	1.67949	2285.5371	1.68025	2293.5120	1.68101	2301.5007
23/32	1.67952	2285.7861	1.68027	2293.7614	1.68103	2301.7505
¾	1.67954	2286.0352	1.68030	2294.0109	1.68105	2302.0004
25/32	1.67957	2286.2842	1.68032	2294.2603	1.68108	2302.2503
13/16	1.67959	2286.5332	1.68034	2294.5098	1.68110	2302.5002
27/32	1.67961	2286.7823	1.68037	2294.7593	1.68112	2302.7502
⅞	1.67964	2287.0314	1.68039	2295.0088	1.68115	2303.0001
29/32	1.67966	2287.2804	1.68042	2295.2583	1.68117	2303.2501
15/16	1.67968	2287.5295	1.68044	2295.5078	1.68119	2303.5000
31/32	1.67971	2287.7787	1.68046	2295.7574	1.68122	2303.7500
1	1.67973	2288.0278	1.68049	2296.0069	1.68124	2304.0000

48′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.68124	2304.0000	1.68199	2312.0069	1.68275	2320.0278
1/32	1.68126	2304.2500	1.68202	2312.2574	1.68277	2320.2787
1/16	1.68129	2304.5000	1.68204	2312.5078	1.68279	2320.5295
3/32	1.68131	2304.7501	1.68207	2312.7583	1.68282	2320.7804
1/8	1.68134	2305.0001	1.68209	2313.0088	1.68284	2321.0314
5/32	1.68136	2305.2502	1.68211	2313.2593	1.68286	2321.2823
3/16	1.68138	2305.5002	1.68214	2313.5098	1.68289	2321.5332
7/32	1.68141	2305.7503	1.68216	2313.7603	1.68291	2321.7842
1/4	1.68143	2306.0004	1.68218	2314.0109	1.68293	2322.0352
9/32	1.68145	2306.2505	1.68221	2314.2614	1.68296	2322.2861
5/16	1.68148	2306.5007	1.68223	2314.5120	1.68298	2322.5371
11/32	1.68150	2306.7508	1.68225	2314.7625	1.68300	2322.7881
3/8	1.68152	2307.0010	1.68228	2315.0131	1.68303	2323.0392
13/32	1.68155	2307.2511	1.68230	2315.2637	1.68305	2323.2902
7/16	1.68157	2307.5013	1.68232	2315.5143	1.68308	2323.5413
15/32	1.68159	2307.7515	1.68235	2315.7650	1.68310	2323.7923
1/2	1.68162	2308.0017	1.68237	2316.0156	1.68312	2324.0434
17/32	1.68164	2308.2520	1.68239	2316.2663	1.68315	2324.2945
9/16	1.68167	2308.5022	1.68242	2316.5170	1.68317	2324.5456
19/32	1.68169	2308.7524	1.68244	2316.7676	1.68319	2324.7967
5/8	1.68171	2309.0027	1.68246	2317.0183	1.68322	2325.0479
21/32	1.68174	2309.2530	1.68249	2317.2690	1.68324	2325.2990
11/16	1.68176	2309.5033	1.68251	2317.5198	1.68326	2325.5502
23/32	1.68178	2309.7536	1.68254	2317.7705	1.68329	2325.8013
3/4	1.68181	2310.0039	1.68256	2318.0213	1.68331	2326.0525
25/32	1.68183	2310.2542	1.68258	2318.2720	1.68333	2326.3037
13/16	1.68185	2310.5046	1.68261	2318.5228	1.68336	2326.5549
27/32	1.68188	2310.7549	1.68263	2318.7736	1.68338	2326.8062
7/8	1.68190	2311.0053	1.68265	2319.0244	1.68340	2327.0574
29/32	1.68192	2311.2557	1.68268	2319.2752	1.68343	2327.3087
15/16	1.68195	2311.5061	1.68270	2319.5261	1.68345	2327.5599
31/32	1.68197	2311.7565	1.68272	2319.7769	1.68347	2327.8112
1	1.68199	2312.0069	1.68275	2320.0278	1.68350	2328.0625

48′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.68350	2328.0625	1.68425	2336.1111	1.68499	2344.1736
1/32	1.68352	2328.3138	1.68427	2336.3629	1.68502	2344.4258
1/16	1.68354	2328.5651	1.68429	2336.6146	1.68504	2344.6780
3/32	1.68357	2328.8165	1.68432	2336.8664	1.68506	2344.9302
1/8	1.68359	2329.0678	1.68434	2337.1182	1.68509	2345.1824
5/32	1.68361	2329.3192	1.68436	2337.3700	1.68511	2345.4346
3/16	1.68364	2329.5706	1.68439	2337.6218	1.68514	2345.6869
7/32	1.68366	2329.8219	1.68441	2337.8736	1.68516	2345.9391
1/4	1.68368	2330.0734	1.68443	2338.1254	1.68518	2346.1914
9/32	1.68371	2330.3248	1.68446	2338.3773	1.68521	2346.4437
5/16	1.68373	2330.5762	1.68448	2338.6292	1.68523	2346.6960
11/32	1.68376	2330.8276	1.68450	2338.8810	1.68525	2346.9483
3/8	1.68378	2331.0791	1.68453	2339.1329	1.68528	2347.2006
13/32	1.68380	2331.3306	1.68455	2339.3848	1.68530	2347.4530
7/16	1.68383	2331.5821	1.68457	2339.6367	1.68532	2347.7053
15/32	1.68385	2331.8336	1.68460	2339.8887	1.68535	2347.9577
1/2	1.68387	2332.0851	1.68462	2340.1406	1.68537	2348.2101
17/32	1.68390	2332.3366	1.68464	2340.3926	1.68539	2348.4625
9/16	1.68392	2332.5881	1.68467	2340.6446	1.68542	2348.7149
19/32	1.68394	2332.8397	1.68469	2340.8965	1.68544	2348.9673
5/8	1.68397	2333.0913	1.68471	2341.1485	1.68546	2349.2197
21/32	1.68399	2333.3428	1.68474	2341.4006	1.68549	2349.4722
11/16	1.68401	2333.5944	1.68476	2341.6526	1.68551	2349.7246
23/32	1.68404	2333.8460	1.68478	2341.9046	1.68553	2349.9771
3/4	1.68406	2334.0977	1.68481	2342.1567	1.68556	2350.2296
25/32	1.68408	2334.3493	1.68483	2342.4088	1.68558	2350.4821
13/16	1.68411	2334.6009	1.68485	2342.6608	1.68560	2350.7346
27/32	1.68413	2334.8526	1.68488	2342.9129	1.68563	2350.9871
7/8	1.68415	2335.1043	1.68490	2343.1650	1.68565	2351.2397
29/32	1.68418	2335.3560	1.68492	2343.4172	1.68567	2351.4922
15/16	1.68420	2335.6077	1.68495	2343.6693	1.68570	2351.7448
31/32	1.68422	2335.8594	1.68497	2343.9214	1.68572	2351.9974
1	1.68425	2336.1111	1.68499	2344.1736	1.68574	2352.2500

48′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.68574	2352.2500	1.68649	2360.3403	1.68723	2368.4444
1/32	1.68577	2352.5026	1.68651	2360.5933	1.68725	2368.6979
1/16	1.68579	2352.7552	1.68653	2360.8464	1.68728	2368.9514
3/32	1.68581	2353.0079	1.68656	2361.0995	1.68730	2369.2049
1/8	1.68584	2353.2605	1.68658	2361.3525	1.68732	2369.4584
5/32	1.68586	2353.5132	1.68660	2361.6056	1.68735	2369.7120
3/16	1.68588	2353.7659	1.68663	2361.8588	1.68737	2369.9655
7/32	1.68590	2354.0186	1.68665	2362.1119	1.68739	2370.2191
1/4	1.68593	2354.2713	1.68667	2362.3650	1.68742	2370.4727
9/32	1.68595	2354.5240	1.68670	2362.6182	1.68744	2370.7262
5/16	1.68597	2354.7767	1.68672	2362.8713	1.68746	2370.9798
11/32	1.68600	2355.0295	1.68674	2363.1245	1.68749	2371.2335
3/8	1.68602	2355.2822	1.68677	2363.3777	1.68751	2371.4871
13/32	1.68604	2355.5350	1.68679	2363.6309	1.68753	2371.7407
7/16	1.68607	2355.7878	1.68681	2363.8841	1.68756	2371.9944
15/32	1.68609	2356.0406	1.68684	2364.1374	1.68758	2372.2481
1/2	1.68611	2356.2934	1.68686	2364.3906	1.68760	2372.5017
17/32	1.68614	2356.5462	1.68688	2364.6439	1.68763	2372.7554
9/16	1.68616	2356.7991	1.68691	2364.8972	1.68765	2373.0091
19/32	1.68618	2357.0519	1.68693	2365.1505	1.68767	2373.2629
5/8	1.68621	2357.3048	1.68695	2365.4038	1.68770	2373.5166
21/32	1.68623	2357.5577	1.68698	2365.6571	1.68772	2373.7704
11/16	1.68625	2357.8106	1.68700	2365.9104	1.68774	2374.0241
23/32	1.68628	2358.0635	1.68702	2366.1637	1.68777	2374.2779
3/4	1.68630	2358.3164	1.68705	2366.4171	1.68779	2374.5317
25/32	1.68632	2358.5693	1.68707	2366.6705	1.68781	2374.7855
13/16	1.68635	2358.8223	1.68709	2366.9239	1.68784	2375.0393
27/32	1.68637	2359.0753	1.68712	2367.1773	1.68786	2375.2931
7/8	1.68639	2359.3282	1.68714	2367.4307	1.68788	2375.5470
29/32	1.68642	2359.5812	1.68716	2367.6841	1.68791	2375.8008
15/16	1.68644	2359.8342	1.68719	2367.9375	1.68793	2376.0547
31/32	1.68646	2360.0872	1.68721	2368.1910	1.68795	2376.3086
1	1.68649	2360.3403	1.68723	2368.4444	1.68797	2376.5625

48′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.68797	2376.5625	1.68872	2384.6944	1.68946	2392.8403
1/32	1.68800	2376.8164	1.68874	2384.9488	1.68948	2393.0951
1/16	1.68802	2377.0703	1.68876	2385.2032	1.68950	2393.3499
3/32	1.68804	2377.3243	1.68879	2385.4575	1.68953	2393.6047
1/8	1.68807	2377.5782	1.68881	2385.7119	1.68955	2393.8595
5/32	1.68809	2377.8322	1.68883	2385.9663	1.68957	2394.1143
3/16	1.68811	2378.0862	1.68886	2386.2207	1.68960	2394.3692
7/32	1.68814	2378.3402	1.68888	2386.4752	1.68962	2394.6240
1/4	1.68816	2378.5942	1.68890	2386.7296	1.68964	2394.8789
9/32	1.68818	2378.8482	1.68892	2386.9841	1.68966	2395.1338
5/16	1.68821	2379.1022	1.68895	2387.2385	1.68969	2395.3887
11/32	1.68823	2379.3563	1.68897	2387.4930	1.68971	2395.6436
3/8	1.68825	2379.6104	1.68899	2387.7475	1.68973	2395.8985
13/32	1.68828	2379.8644	1.68902	2388.0020	1.68976	2396.1535
7/16	1.68830	2380.1185	1.68904	2388.2565	1.68978	2396.4084
15/32	1.68832	2380.3726	1.68906	2388.5111	1.68980	2396.6634
1/2	1.68835	2380.6267	1.68909	2388.7656	1.68983	2396.9184
17/32	1.68837	2380.8809	1.68911	2389.0202	1.68985	2397.1734
9/16	1.68839	2381.1350	1.68913	2389.2748	1.68987	2397.4284
19/32	1.68842	2381.3892	1.68916	2389.5294	1.68990	2397.6834
5/8	1.68844	2381.6433	1.68918	2389.7840	1.68992	2397.9385
21/32	1.68846	2381.8975	1.68920	2390.0386	1.68994	2398.1935
11/16	1.68848	2382.1517	1.68923	2390.2932	1.68997	2398.4486
23/32	1.68851	2382.4059	1.68925	2390.5479	1.68999	2398.7037
3/4	1.68853	2382.6602	1.68927	2390.8025	1.69001	2398.9588
25/32	1.68855	2382.9144	1.68929	2391.0572	1.69003	2399.2139
13/16	1.68858	2383.1686	1.68932	2391.3119	1.69006	2399.4690
27/32	1.68860	2383.4229	1.68934	2391.5666	1.69008	2399.7241
7/8	1.68862	2383.6772	1.68936	2391.8213	1.69010	2399.9793
29/32	1.68865	2383.9315	1.68939	2392.0760	1.69013	2400.2344
15/16	1.68867	2384.1858	1.68941	2392.3308	1.69015	2400.4896
31/32	1.68869	2384.4401	1.68943	2392.5855	1.69017	2400.7448
1	1.68872	2384.6944	1.68946	2392.8403	1.69020	2401.0000

49′

Fractions of an Inch.	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.69020	2401.0000	1.69093	2409.1736	1.69167	2417.3611
1/32	1.69022	2401.2552	1.69096	2409.4293	1.69169	2417.6172
1/16	1.69024	2401.5104	1.69098	2409.6849	1.69172	2417.8733
3/32	1.69027	2401.7657	1.69100	2409.9406	1.69174	2418.1294
1/8	1.69029	2402.0209	1.69103	2410.1963	1.69176	2418.3855
5/32	1.69031	2402.2762	1.69105	2410.4520	1.69179	2418.6417
3/16	1.69033	2402.5315	1.69107	2410.7077	1.69181	2418.8978
7/32	1.69036	2402.7868	1.69110	2410.9634	1.69183	2419.1540
1/4	1.69038	2403.0421	1.69112	2411.2192	1.69185	2419.4102
9/32	1.69040	2403.2974	1.69114	2411.4749	1.69188	2419.6663
5/16	1.69043	2403.5528	1.69116	2411.7307	1.69190	2419.9226
11/32	1.69045	2403.8081	1.69119	2411.9865	1.69192	2420.1788
3/8	1.69047	2404.0635	1.69121	2412.2423	1.69195	2420.4350
13/32	1.69050	2404.3189	1.69123	2412.4981	1.69197	2420.6913
7/16	1.69052	2404.5742	1.69126	2412.7539	1.69199	2420.9475
15/32	1.69054	2404.8297	1.69128	2413.0098	1.69202	2421.2038
1/2	1.69057	2405.0851	1.69130	2413.2656	1.69204	2421.4601
17/32	1.69059	2405.3405	1.69133	2413.5215	1.69206	2421.7164
9/16	1.69061	2405.5959	1.69135	2413.7774	1.69208	2421.9727
19/32	1.69063	2405.8514	1.69137	2414.0333	1.69211	2422.2290
5/8	1.69066	2406.1069	1.69139	2414.2892	1.69213	2422.4854
21/32	1.69068	2406.3624	1.69142	2414.5451	1.69215	2422.7417
11/16	1.69070	2406.6179	1.69144	2414.8010	1.69218	2422.9981
23/32	1.69073	2406.8734	1.69146	2415.0570	1.69220	2423.2545
3/4	1.69075	2407.1289	1.69149	2415.3129	1.69222	2423.5109
25/32	1.69077	2407.3844	1.69151	2415.5689	1.69225	2423.7673
13/16	1.69080	2407.6400	1.69153	2415.8249	1.69227	2424.0237
27/32	1.69082	2407.8956	1.69156	2416.0809	1.69229	2424.2801
7/8	1.69084	2408.1511	1.69158	2416.3369	1.69231	2424.5366
29/32	1.69086	2408.4067	1.69160	2416.5929	1.69234	2424.7930
15/16	1.69089	2408.6624	1.69162	2416.8490	1.69236	2425.0495
31/32	1.69091	2408.9180	1.69165	2417.1050	1.69238	2425.3060
1	1.69093	2409.1736	1.69167	2417.3611	1.69241	2425.5625

49′

Fractions of an Inch.	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.69241	2425.5625	1.69314	2433.7778	1.69387	2442.0069
1/32	1.69243	2425.8190	1.69316	2434.0347	1.69390	2442.2643
1/16	1.69245	2426.0755	1.69319	2434.2917	1.69392	2442.5217
3/32	1.69248	2426.3321	1.69321	2434.5487	1.69394	2442.7791
1/8	1.69250	2426.5887	1.69323	2434.8057	1.69396	2443.0366
5/32	1.69252	2426.8452	1.69326	2435.0627	1.69399	2443.2940
3/16	1.69254	2427.1018	1.69328	2435.3197	1.69401	2443.5515
7/32	1.69257	2427.3584	1.69330	2435.5767	1.69403	2443.8089
1/4	1.69259	2427.6150	1.69332	2435.8338	1.69406	2444.0664
9/32	1.69261	2427.8716	1.69335	2436.0908	1.69408	2444.3239
5/16	1.69264	2428.1283	1.69337	2436.3479	1.69410	2444.5814
11/32	1.69266	2428.3849	1.69339	2436.6050	1.69413	2444.8389
3/8	1.69268	2428.6416	1.69342	2436.8621	1.69415	2445.0965
13/32	1.69270	2428.8983	1.69344	2437.1192	1.69417	2445.3540
7/16	1.69273	2429.1550	1.69346	2437.3763	1.69419	2445.6116
15/32	1.69275	2429.4117	1.69348	2437.6335	1.69422	2445.8691
1/2	1.69277	2429.6684	1.69351	2437.8906	1.69424	2446.1267
17/32	1.69280	2429.9251	1.69353	2438.1478	1.69426	2446.3843
9/16	1.69282	2430.1819	1.69355	2438.4050	1.69429	2446.6420
19/32	1.69284	2430.4386	1.69358	2438.6622	1.69431	2446.8996
5/8	1.69287	2430.6954	1.69360	2438.9194	1.69433	2447.1572
21/32	1.69289	2430.9522	1.69362	2439.1766	1.69435	2447.4149
11/16	1.69291	2431.2090	1.69364	2439.4338	1.69438	2447.6726
23/32	1.69293	2431.4658	1.69367	2439.6911	1.69440	2447.9302
3/4	1.69296	2431.7227	1.69369	2439.9484	1.69442	2448.1879
25/32	1.69298	2431.9795	1.69371	2440.2056	1.69445	2448.4456
13/16	1.69300	2432.2364	1.69374	2440.4629	1.69447	2448.7034
27/32	1.69303	2432.4932	1.69376	2440.7202	1.69449	2448.9611
7/8	1.69305	2432.7501	1.69378	2440.9775	1.69451	2449.2189
29/32	1.69307	2433.0070	1.69380	2441.2349	1.69454	2449.4766
15/16	1.69309	2433.2639	1.69383	2441.4922	1.69456	2449.7344
31/32	1.69312	2433.5208	1.69385	2441.7496	1.69458	2449.9922
1	1.69314	2433.7778	1.69387	2442.0069	1.69461	2450.2500

49′

Fractions of an Inch.	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.69461	2450.2500	1.69534	2458.5069	1.69607	2466.7778
1/32	1.69463	2450.5078	1.69536	2458.7652	1.69609	2467.0365
1/16	1.69465	2450.7657	1.69538	2459.0235	1.69611	2467.2952
3/32	1.69467	2451.0235	1.69540	2459.2817	1.69613	2467.5539
1/8	1.69470	2451.2814	1.69543	2459.5400	1.69616	2467.8126
5/32	1.69472	2451.5392	1.69545	2459.7983	1.69618	2468.0714
3/16	1.69474	2451.7971	1.69547	2460.0567	1.69620	2468.3301
7/32	1.69477	2452.0550	1.69550	2460.3150	1.69622	2468.5889
1/4	1.69479	2452.3129	1.69552	2460.5734	1.69625	2468.8477
9/32	1.69481	2452.5709	1.69554	2460.8317	1.69627	2469.1065
5/16	1.69483	2452.8288	1.69556	2461.0901	1.69629	2469.3653
11/32	1.69486	2453.0868	1.69559	2461.3485	1.69632	2469.6241
3/8	1.69488	2453.3447	1.69561	2461.6069	1.69634	2469.8829
13/32	1.69490	2453.6027	1.69563	2461.8653	1.69636	2470.1418
7/16	1.69492	2453.8607	1.69565	2462.1237	1.69638	2470.4006
15/32	1.69495	2454.1187	1.69568	2462.3822	1.69641	2470.6595
1/2	1.69497	2454.3767	1.69570	2462.6406	1.69643	2470.9184
17/32	1.69499	2454.6348	1.69572	2462.8991	1.69645	2471.1773
9/16	1.69502	2454.8928	1.69575	2463.1576	1.69647	2471.4362
19/32	1.69504	2455.1509	1.69577	2463.4161	1.69650	2471.6952
5/8	1.69506	2455.4090	1.69579	2463.6746	1.69652	2471.9541
21/32	1.69508	2455.6671	1.69581	2463.9331	1.69654	2472.2131
11/16	1.69511	2455.9252	1.69584	2464.1917	1.69657	2472.4720
23/32	1.69513	2456.1833	1.69586	2464.4502	1.69659	2472.7310
3/4	1.69515	2456.4414	1.69588	2464.7088	1.69661	2472.9900
25/32	1.69518	2456.6996	1.69591	2464.9673	1.69663	2473.2490
13/16	1.69520	2456.9577	1.69593	2465.2259	1.69666	2473.5081
27/32	1.69522	2457.2159	1.69595	2465.4845	1.69668	2473.7671
7/8	1.69524	2457.4741	1.69597	2465.7432	1.69670	2474.0262
29/32	1.69527	2457.7323	1.69600	2466.0018	1.69672	2474.2852
15/16	1.69529	2457.9905	1.69602	2466.2604	1.69675	2474.5443
31/32	1.69531	2458.2487	1.69604	2466.5191	1.69677	2474.8034
1	1.69534	2458.5069	1.69607	2466.7778	1.69679	2475.0625

49′

Fractions of an Inch.	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.69679	2475.0625	1.69752	2483.3611	1.69825	2491.6736
1/32	1.69682	2475.3216	1.69754	2483.6207	1.69827	2491.9336
1/16	1.69684	2475.5808	1.69757	2483.8802	1.69829	2492.1936
3/32	1.69686	2475.8399	1.69759	2484.1398	1.69831	2492.4536
1/8	1.69688	2476.0991	1.69761	2484.3994	1.69834	2492.7137
5/32	1.69691	2476.3582	1.69763	2484.6590	1.69836	2492.9737
3/16	1.69693	2476.6174	1.69766	2484.9186	1.69838	2493.2338
7/32	1.69695	2476.8766	1.69768	2485.1783	1.69840	2493.4938
1/4	1.69697	2477.1359	1.69770	2485.4379	1.69843	2493.7539
9/32	1.69700	2477.3951	1.69772	2485.6976	1.69845	2494.0140
5/16	1.69702	2477.6543	1.69775	2485.9573	1.69847	2494.2741
11/32	1.69704	2477.9136	1.69777	2486.2170	1.69849	2494.5342
3/8	1.69707	2478.1729	1.69779	2486.4767	1.69852	2494.7944
13/32	1.69709	2478.4321	1.69781	2486.7364	1.69854	2495.0545
7/16	1.69711	2478.6914	1.69784	2486.9961	1.69856	2495.3147
15/32	1.69713	2478.9507	1.69786	2487.2559	1.69859	2495.5749
1/2	1.69716	2479.2101	1.69788	2487.5156	1.69861	2495.8351
17/32	1.69718	2479.4694	1.69791	2487.7754	1.69863	2496.0953
9/16	1.69720	2479.7288	1.69793	2488.0352	1.69865	2496.3555
19/32	1.69722	2479.9881	1.69795	2488.2950	1.69868	2496.6157
5/8	1.69725	2480.2475	1.69797	2488.5548	1.69870	2496.8760
21/32	1.69727	2480.5069	1.69800	2488.8146	1.69872	2497.1362
11/16	1.69729	2480.7663	1.69802	2489.0745	1.69874	2497.3965
23/32	1.69732	2481.0257	1.69804	2489.3343	1.69877	2497.6568
3/4	1.69734	2481.2852	1.69806	2489.5942	1.69879	2497.9171
25/32	1.69736	2481.5446	1.69809	2489.8541	1.69881	2498.1774
13/16	1.69738	2481.8041	1.69811	2490.1140	1.69883	2498.4377
27/32	1.69741	2482.0635	1.69813	2490.3739	1.69886	2498.6981
7/8	1.69743	2482.3230	1.69815	2490.6338	1.69888	2498.9584
29/32	1.69745	2482.5825	1.69818	2490.8937	1.69890	2499.2188
15/16	1.69747	2482.8420	1.69820	2491.1537	1.69892	2499.4792
31/32	1.69750	2483.1016	1.69822	2491.4136	1.69895	2499.7396
1	1.69752	2483.3611	1.69825	2491.6736	1.69897	2500.0000

50′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.69897	2500.0000	1.69969	2508.3403	1.70042	2516.6944
1/16	1.69902	2500.5209	1.69974	2508.8620	1.70046	2517.2170
1/8	1.69906	2501.0418	1.69978	2509.3838	1.70051	2517.7397
3/16	1.69911	2501.5627	1.69983	2509.9056	1.70055	2518.2624
1/4	1.69915	2502.0838	1.69987	2510.4275	1.70060	2518.7852
5/16	1.69920	2502.6048	1.69992	2510.9495	1.70064	2519.3080
3/8	1.69924	2503.1260	1.69996	2511.4715	1.70069	2519.8308
7/16	1.69929	2503.6472	1.70001	2511.9935	1.70073	2520.3538
1/2	1.69933	2504.1684	1.70005	2512.5156	1.70078	2520.8767
9/16	1.69938	2504.6897	1.70010	2513.0378	1.70082	2521.3998
5/8	1.69942	2505.2110	1.70014	2513.5600	1.70087	2521.9229
11/16	1.69947	2505.7324	1.70019	2514.0823	1.70091	2522.4460
3/4	1.69951	2506.2539	1.70023	2514.6046	1.70096	2522.9692
13/16	1.69956	2506.7754	1.70028	2515.1270	1.70100	2523.4924
7/8	1.69960	2507.2970	1.70033	2515.6494	1.70105	2524.0157
15/16	1.69965	2507.8186	1.70037	2516.1719	1.70109	2524.5391

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.70114	2525.0625	1.70186	2533.4444	1.70257	2541.8403
1/16	1.70118	2525.5860	1.70190	2533.9688	1.70262	2542.3655
1/8	1.70123	2526.1095	1.70195	2534.4932	1.70266	2542.8907
3/16	1.70127	2526.6331	1.70199	2535.0176	1.70271	2543.4160
1/4	1.70132	2527.1567	1.70204	2535.5421	1.70275	2543.9414
5/16	1.70136	2527.6804	1.70208	2536.0667	1.70280	2544.4668
3/8	1.70141	2528.2041	1.70213	2536.5913	1.70284	2544.9923
7/16	1.70145	2528.7279	1.70217	2537.1159	1.70289	2545.5178
1/2	1.70150	2529.2517	1.70222	2537.6406	1.70293	2546.0434
9/16	1.70154	2529.7756	1.70226	2538.1654	1.70298	2546.5690
5/8	1.70159	2530.2996	1.70230	2538.6902	1.70302	2547.0947
11/16	1.70163	2530.8236	1.70235	2539.2151	1.70307	2547.6205
3/4	1.70168	2531.3477	1.70239	2539.7400	1.70311	2548.1463
13/16	1.70172	2531.8718	1.70244	2540.2650	1.70316	2548.6721
7/8	1.70177	2532.3959	1.70248	2540.7900	1.70320	2549.1980
15/16	1.70181	2532.9202	1.70253	2541.3151	1.70325	2549.7240

50′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.70329	2550.2500	1.70401	2558.6736	1.70472	2567.1111
1/16	1.70334	2550.7761	1.70405	2559.2005	1.70477	2567.6389
1/8	1.70338	2551.3022	1.70410	2559.7275	1.70481	2568.1668
3/16	1.70343	2551.8284	1.70414	2560.2546	1.70486	2568.6947
1/4	1.70347	2552.3546	1.70419	2560.7817	1.70490	2569.2227
5/16	1.70352	2552.8809	1.70423	2561.3088	1.70495	2569.7507
3/8	1.70356	2553.4072	1.70428	2561.8360	1.70499	2570.2788
7/16	1.70360	2553.9336	1.70432	2562.3633	1.70503	2570.8069
1/2	1.70365	2554.4601	1.70437	2562.8906	1.70508	2571.3351
9/16	1.70369	2554.9866	1.70441	2563.4180	1.70512	2571.8633
5/8	1.70374	2555.5131	1.70445	2563.9454	1.70517	2572.3916
11/16	1.70378	2556.0397	1.70450	2564.4729	1.70521	2572.9199
3/4	1.70383	2556.5664	1.70454	2565.0004	1.70526	2573.4484
13/16	1.70387	2557.0931	1.70459	2565.5280	1.70530	2573.9768
7/8	1.70392	2557.6199	1.70463	2566.0557	1.70535	2574.5053
15/16	1.70396	2558.1467	1.70468	2566.5834	1.70539	2575.0339

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.70544	2575.5625	1.70615	2584.0278	1.70686	2592.5069
1/16	1.70548	2576.0912	1.70619	2584.5573	1.70690	2593.0374
1/8	1.70553	2576.6199	1.70624	2585.0869	1.70695	2593.5678
3/16	1.70557	2577.1487	1.70628	2585.6166	1.70699	2594.0983
1/4	1.70561	2577.6775	1.70633	2586.1463	1.70704	2594.6289
5/16	1.70566	2578.2064	1.70637	2586.6760	1.70708	2595.1595
3/8	1.70570	2578.7354	1.70642	2587.2058	1.70713	2595.6902
7/16	1.70575	2579.2644	1.70646	2587.7357	1.70717	2596.2209
1/2	1.70579	2579.7934	1.70650	2588.2656	1.70722	2596.7517
9/16	1.70584	2580.3225	1.70655	2588.7956	1.70726	2597.2826
5/8	1.70588	2580.8517	1.70659	2589.3256	1.70730	2597.8135
11/16	1.70593	2581.3809	1.70664	2589.8557	1.70735	2598.3444
3/4	1.70597	2581.9102	1.70668	2590.3859	1.70739	2598.8754
13/16	1.70602	2582.4395	1.70673	2590.9160	1.70744	2599.4065
7/8	1.70606	2582.9689	1.70677	2591.4463	1.70748	2599.9376
15/16	1.70610	2583.4983	1.70682	2591.9766	1.70753	2600.4688

51′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.70757	2601.0000	1.70828	2609.5069	1.70899	2618.0278
1/16	1.70761	2601.5313	1.70832	2610.0391	1.70903	2618.5608
1/8	1.70766	2602.0626	1.70837	2610.5713	1.70908	2619.0939
3/16	1.70770	2602.5940	1.70841	2611.1035	1.70912	2619.6270
1/4	1.70775	2603.1254	1.70846	2611.6359	1.70916	2620.1602
5/16	1.70779	2603.6569	1.70850	2612.1682	1.70921	2620.6934
3/8	1.70784	2604.1885	1.70854	2612.7006	1.70925	2621.2267
7/16	1.70788	2604.7201	1.70859	2613.2331	1.70930	2621.7600
1/2	1.70792	2605.2517	1.70863	2613.7656	1.70934	2622.2934
9/16	1.70797	2605.7834	1.70868	2614.2982	1.70938	2622.8269
5/8	1.70801	2606.3152	1.70872	2614.8308	1.70943	2623.3604
11/16	1.70806	2606.8470	1.70877	2615.3635	1.70947	2623.8939
3/4	1.70810	2607.3789	1.70881	2615.8963	1.70952	2624.4275
13/16	1.70815	2607.9108	1.70885	2616.4291	1.70956	2624.9612
7/8	1.70819	2608.4428	1.70890	2616.9619	1.70961	2625.4949
15/16	1.70823	2608.9749	1.70894	2617.4948	1.70965	2626.0287

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.70969	2626.5625	1.71040	2635.1111	1.71110	2643.6736
1/16	1.70974	2627.0964	1.71044	2635.6459	1.71115	2644.2092
1/8	1.70978	2627.6303	1.71049	2636.1807	1.71119	2644.7449
3/16	1.70983	2628.1643	1.71053	2636.7155	1.71124	2645.2806
1/4	1.70987	2628.6984	1.71058	2637.2504	1.71128	2645.8164
5/16	1.70991	2629.2324	1.71062	2637.7854	1.71132	2646.3522
3/8	1.70996	2629.7666	1.71066	2638.3204	1.71137	2646.8881
7/16	1.71000	2630.3008	1.71071	2638.8555	1.71141	2647.4241
1/2	1.71005	2630.8351	1.71075	2639.3906	1.71146	2647.9601
9/16	1.71009	2631.3694	1.71080	2639.9258	1.71150	2648.4961
5/8	1.71014	2631.9038	1.71084	2640.4610	1.71154	2649.0322
11/16	1.71018	2632.4382	1.71088	2640.9963	1.71159	2649.5684
3/4	1.71022	2632.9727	1.71093	2641.5317	1.71163	2650.1046
13/16	1.71027	2633.5072	1.71097	2642.0671	1.71168	2650.6409
7/8	1.71031	2634.0418	1.71102	2642.6025	1.71172	2651.1772
15/16	1.71036	2634.5764	1.71106	2643.1380	1.71176	2651.7136

51′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.71181	2652.2500	1.71251	2660.8403	1.71321	2669.4444
1/16	1.71185	2652.7865	1.71255	2661.3776	1.71325	2669.9827
⅛	1.71190	2653.3230	1.71260	2661.9150	1.71330	2670.5209
3/16	1.71194	2653.8596	1.71264	2662.4525	1.71334	2671.0593
¼	1.71198	2654.3963	1.71268	2662.9900	1.71339	2671.5977
5/16	1.71203	2654.9330	1.71273	2663.5276	1.71343	2672.1361
⅜	1.71207	2655.4697	1.71277	2664.0652	1.71347	2672.6746
7/16	1.71211	2656.0065	1.71282	2664.6029	1.71352	2673.2131
½	1.71216	2656.5434	1.71286	2665.1406	1.71356	2673.7517
9/16	1.71220	2657.0803	1.71290	2665.6784	1.71360	2674.2904
⅝	1.71225	2657.6173	1.71295	2666.2163	1.71365	2674.8291
11/16	1.71229	2658.1543	1.71299	2666.7542	1.71369	2675.3679
¾	1.71233	2658.6914	1.71304	2667.2921	1.71374	2675.9067
13/16	1.71238	2659.2285	1.71308	2667.8301	1.71378	2676.4456
⅞	1.71242	2659.7657	1.71312	2668.3682	1.71382	2676.9845
15/16	1.71247	2660.3030	1.71317	2668.9063	1.71387	2677.5235

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.71391	2678.0625	1.71461	2686.6944	1.71531	2695.3403
1/16	1.71395	2678.6016	1.71465	2687.2344	1.71535	2695.8811
⅛	1.71400	2679.1407	1.71470	2687.7744	1.71539	2696.4220
3/16	1.71404	2679.6799	1.71474	2688.3145	1.71544	2696.9629
¼	1.71409	2680.2192	1.71478	2688.8546	1.71548	2697.5039
5/16	1.71413	2680.7585	1.71483	2689.3948	1.71552	2698.0449
⅜	1.71417	2681.2979	1.71487	2689.9350	1.71557	2698.5860
7/16	1.71422	2681.8373	1.71491	2690.4753	1.71561	2699.1272
½	1.71426	2682.3767	1.71496	2691.0156	1.71566	2699.6684
9/16	1.71430	2682.9163	1·71500	2691.5560	1.71570	2700.2097
⅝	1.71435	2683.4558	1.71505	2692.0965	1.71574	2700.7510
11/16	1.71439	2683.9955	1.71509	2692.6370	1.71579	2701.2923
¾	1.71443	2684.5352	1.71513	2693.1775	1.71583	2701.8338
13/16	1.71448	2685.0749	1.71518	2693.7181	1.71587	2702.3752
⅞	1.71452	2685.6147	1.71522	2694.2588	1.71592	2702.9168
15/16	1.71457	2686.1545	1.71526	2694.7995	1.71596	2703.4584

52′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.71600	2704.0000	1.71670	2712.6736	1.71739	2721.3611
1/16	1.71605	2704.5417	1.71674	2713.2162	1.71744	2721.9045
1/8	1.71609	2705.0834	1.71679	2713.7588	1.71748	2722.4480
3/16	1.71613	2705.6252	1.71683	2714.3015	1.71752	2722.9916
1/4	1.71618	2706.1671	1.71687	2714.8442	1.71757	2723.5352
5/16	1.71622	2706.7090	1.71692	2715.3870	1.71761	2724.0788
3/8	1.71626	2707.2510	1.71696	2715.9298	1.71765	2724.6225
7/16	1.71631	2707.7930	1.71700	2716.4727	1.71770	2725.1663
1/2	1.71635	2708.3351	1.71705	2717.0156	1.71774	2725.7101
9/16	1.71639	2708.8772	1.71709	2717.5586	1.71778	2726.2539
5/8	1.71644	2709.4194	1.71713	2718.1017	1.71783	2726.7979
11/16	1.71648	2709.9616	1.71718	2718.6448	1.71787	2727.3418
3/4	1.71653	2710.5039	1.71722	2719.1879	1.71791	2727.8859
13/16	1.71657	2711.0463	1.71726	2719.7311	1.71796	2728.4299
7/8	1.71661	2711.5887	1.71731	2720.2744	1.71800	2728.9741
15/16	1.71666	2712.1311	1.71735	2720.8177	1.71804	2729.5183

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.71809	2730.0625	1.71878	2738.7778	1.71947	2747.5069
1/16	1.71813	2730.6068	1.71882	2739.3229	1.71951	2748.0530
1/8	1.71817	2731.1512	1.71886	2739.8682	1.71956	2748.5991
3/16	1.71822	2731.6956	1.71891	2740.4134	1.71960	2749.1452
1/4	1.71826	2732.2400	1.71895	2740.9588	1.71964	2749.6914
5/16	1.71830	2732.7845	1.71899	2741.5042	1.71969	2750.2377
3/8	1.71835	2733.3291	1.71904	2742.0496	1.71973	2750.7840
7/16	1.71839	2733.8737	1.71908	2742.5951	1.71977	2751.3303
1/2	1.71843	2734.4184	1.71912	2743.1406	1.71981	2751.8767
9/16	1.71848	2734.9631	1.71917	2743.6862	1.71986	2752.4232
5/8	1.71852	2735.5079	1.71921	2744.2319	1.71990	2752.9697
11/16	1.71856	2736.0528	1.71925	2744.7776	1.71994	2753.5163
3/4	1.71861	2736.5977	1.71930	2745.3234	1.71999	2754.0629
13/16	1.71865	2737.1426	1.71934	2745.8692	1.72003	2754.6096
7/8	1.71869	2737.6876	1.71938	2746.4150	1.72007	2755.1564
15/16	1.71874	2738.2327	1.71943	2746.9610	1.72012	2755.7032

52′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.72016	2756.2500	1.72085	2765.0069	1.72154	2773.7778
1/16	1.72020	2756.7969	1.72089	2765.5547	1.72158	2774.3264
1/8	1.72025	2757.3439	1.72093	2766.1025	1.72162	2774.8751
3/16	1.72029	2757.8909	1.72098	2766.6504	1.72166	2775.4239
1/4	1.72033	2758.4379	1.72102	2767.1984	1.72171	2775.9727
5/16	1.72037	2758.9851	1.72106	2767.7463	1.72175	2776.5215
3/8	1.72042	2759.5322	1.72111	2768.2944	1.72179	2777.0704
7/16	1.72046	2760.0795	1.72115	2768.8425	1.72184	2777.6194
1/2	1.72050	2760.6267	1.72119	2769.3906	1.72188	2778.1684
9/16	1.72055	2761.1741	1.72124	2769.9388	1.72192	2778.7175
5/8	1.72059	2761.7215	1.72128	2770.4871	1.72197	2779.2666
11/16	1.72063	2762.2689	1.72132	2771.0354	1.72201	2779.8158
3/4	1.72068	2762.8164	1.72136	2771.5838	1.72205	2780.3650
13/16	1.72072	2763.3640	1.72141	2772.1322	1.72209	2780.9143
7/8	1.72076	2763.9116	1.72145	2772.6807	1.72214	2781.4637
15/16	1.72081	2764.4592	1.72149	2773.2292	1.72218	2782.0130

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.72222	2782.5625	1.72291	2791.3611	1.72359	2800.1736
1/16	1.72227	2783.1120	1.72295	2791.9115	1.72364	2800.7249
1/8	1.72231	2783.6616	1.72299	2792.4619	1.72368	2801.2762
3/16	1.72235	2784.2112	1.72304	2793.0124	1.72372	2801.8275
1/4	1.72239	2784.7609	1.72308	2793.5629	1.72376	2802.3789
5/16	1.72244	2785.3106	1.72312	2794.1135	1.72381	2802.9304
3/8	1.72248	2785.8604	1.72316	2794.6642	1.72385	2803.4819
7/16	1.72252	2786.4102	1.72321	2795.2149	1.72389	2804.0334
1/2	1.72257	2786.9601	1.72325	2795.7656	1.72393	2804.5851
9/16	1.72261	2787.5100	1.72329	2796.3164	1.72398	2805.1367
5/8	1.72265	2788.0600	1.72334	2796.8673	1.72402	2805.6885
11/16	1.72269	2788.6101	1.72338	2797.4182	1.72406	2806.2403
3/4	1.72274	2789.1602	1.72342	2797.9692	1.72411	2806.7921
13/16	1.72278	2789.7103	1.72346	2798.5202	1.72415	2807.3440
7/8	1.72282	2790.2605	1.72351	2799.0713	1.72419	2807.8959
15/16	1.72287	2790.8108	1.72355	2799.6224	1.72423	2808.4479

53′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.72428	2809.0000	1.72496	2817.8403	1.72564	2826.6944
1/16	1.72432	2809.5521	1.72500	2818.3933	1.72568	2827.2483
1/8	1.72436	2810.1043	1.72504	2818.9463	1.72572	2827.8022
3/16	1.72440	2810.6565	1.72509	2819.4994	1.72577	2828.3561
1/4	1.72445	2811.2088	1.72513	2820.0525	1.72581	2828.9102
5/16	1.72449	2811.7611	1.72517	2820.6057	1.72585	2829.4642
3/8	1.72453	2812.3135	1.72521	2821.1590	1.72589	2830.0183
7/16	1.72457	2812.8659	1.72526	2821.7123	1.72594	2830.5725
1/2	1.72462	2813.4184	1.72530	2822.2656	1.72598	2831.1267
9/16	1.72466	2813.9709	1.72534	2822.8190	1.72602	2831.6810
5/8	1.72470	2814.5235	1.72538	2823.3725	1.72606	2832.2354
11/16	1.72475	2815.0762	1.72543	2823.9260	1.72611	2832.7897
3/4	1.72479	2815.6289	1.72547	2824.4796	1.72615	2833.3442
13/16	1.72483	2816.1817	1.72551	2825.0332	1.72619	2833.8987
7/8	1.72487	2816.7345	1.72555	2825.5869	1.72623	2834.4532
15/16	1.72492	2817.2874	1.72560	2826.1407	1.72628	2835.0078

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.72632	2835.5625	1.72700	2844.4444	1.72768	2853.3403
1/16	1.72636	2836.1172	1.72704	2845.0000	1.72772	2853.8967
1/8	1.72640	2836.6720	1.72708	2845.5557	1.72776	2854.4532
3/16	1.72645	2837.2268	1.72713	2846.1114	1.72780	2855.0098
1/4	1.72649	2837.7817	1.72717	2846.6671	1.72785	2855.5664
5/16	1.72653	2838.3366	1.72721	2847.2229	1.72789	2856.1231
3/8	1.72657	2838.8916	1.72725	2847.7788	1.72793	2856.6798
7/16	1.72662	2839.4466	1.72730	2848.3347	1.72797	2857.2366
1/2	1.72666	2840.0017	1.72734	2848.8906	1.72802	2857.7934
9/16	1.72670	2840.5569	1.72738	2849.4466	1.72806	2858.3503
5/8	1.72674	2841.1121	1.72742	2850.0027	1.72810	2858.9072
11/16	1.72679	2841.6673	1.72747	2850.5588	1.72814	2859.4642
3/4	1.72683	2842.2227	1.72751	2851.1150	1.72818	2860.0213
13/16	1.72687	2842.7780	1.72755	2851.6713	1.72823	2860.5784
7/8	1.72691	2843.3334	1.72759	2852.2275	1.72827	2861.1355
15/16	1.72696	2843.8889	1.72763	2852.7839	1.72831	2861.6927

53′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.72835	2862.2500	1.72903	2871.1736	1.72970	2880.1111
1/16	1.72840	2862.8073	1.72907	2871.7318	1.72975	2880.6702
1/8	1.72844	2863.3647	1.72911	2872.2900	1.72979	2881.2293
3/16	1.72848	2863.9221	1.72916	2872.8483	1.72983	2881.7884
1/4	1.72852	2864.4796	1.72920	2873.4067	1.72987	2882.3477
5/16	1.72857	2865.0371	1.72924	2873.9651	1.72992	2882.9069
3/8	1.72861	2865.5947	1.72928	2874.5235	1.72996	2883.4663
7/16	1.72865	2866.1524	1.72933	2875.0821	1.73000	2884.0256
1/2	1.72869	2866.7101	1.72937	2875.6406	1.73004	2884.5851
9/16	1.72873	2867.2678	1.72941	2876.1992	1.73008	2885.1446
5/8	1.72878	2867.8256	1.72945	2876.7579	1.73013	2885.7041
11/16	1.72882	2868.3835	1.72949	2877.3167	1.73017	2886.2637
3/4	1.72886	2868.9414	1.72954	2877.8754	1.73021	2886.8234
13/16	1.72890	2869.4994	1.72958	2878.4343	1.73025	2887.3831
7/8	1.72895	2870.0574	1.72962	2878.9932	1.73029	2887.9428
15/16	1.72899	2870.6155	1.72966	2879.5521	1.73034	2888.5026

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.73038	2889.0625	1.73105	2898.0278	1.73172	2907.0069
1/16	1.73042	2889.6224	1.73109	2898.5886	1.73177	2907.5686
1/8	1.73046	2890.1824	1.73114	2899.1494	1.73181	2908.1303
3/16	1.73050	2890.7424	1.73118	2899.7103	1.73185	2908.6921
1/4	1.73055	2891.3025	1.73122	2900.2713	1.73189	2909.2539
5/16	1.73059	2891.8627	1.73126	2900.8323	1.73193	2909.8158
3/8	1.73063	2892.4229	1.73130	2901.3933	1.73197	2910.3777
7/16	1.73067	2892.9831	1.73135	2901.9545	1.73202	2910.9397
1/2	1.73072	2893.5434	1.73139	2902.5156	1.73206	2911.5017
9/16	1.73076	2894.1038	1.73143	2903.0768	1.73210	2912.0638
5/8	1.73080	2894.6642	1.73147	2903.6381	1.73214	2912.6260
11/16	1.73084	2895.2246	1.73151	2904.1995	1.73218	2913.1882
3/4	1.73088	2895.7852	1.73156	2904.7609	1.73223	2913.7504
13/16	1.73093	2896.3457	1.73160	2905.3223	1.73227	2914.3127
7/8	1.73097	2896.9064	1.73164	2905.8838	1.73231	2914.8751
15/16	1.73101	2897.4670	1.73168	2906.4453	1.73235	2915.4375

54′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.73239	2916.0000	1.73306	2925.0069	1.73373	2934.0278
1/16	1.73244	2916.5625	1.73311	2925.5703	1.73377	2934.5920
1/8	1.73248	2917.1251	1.73315	2926.1338	1.73382	2935.1564
3/16	1.73252	2917.6877	1.73319	2926.6973	1.73386	2935.7207
1/4	1.73256	2918.2504	1.73323	2927.2609	1.73390	2936.2852
5/16	1.73260	2918.8132	1.73327	2927.8245	1.73394	2936.8496
3/8	1.73265	2919.3760	1.73331	2928.3881	1.73398	2937.4142
7/16	1.73269	2919.9388	1.73336	2928.9519	1.73402	2937.9788
1/2	1.73273	2920.5017	1.73340	2929.5156	1.73407	2938.5434
9/16	1.73277	2921.0647	1.73344	2930.0795	1.73411	2939.1081
5/8	1.73281	2921.6277	1.73348	2930.6433	1.73415	2939.6729
11/16	1.73285	2922.1908	1.73352	2931.2073	1.73419	2940.2377
3/4	1.73290	2922.7539	1.73357	2931.7713	1.73423	2940.8025
13/16	1.73294	2923.3171	1.73361	2932.3353	1.73427	2941.3674
7/8	1.73298	2923.8803	1.73365	2932.8994	1.73432	2941.9324
15/16	1.73302	2924.4436	1.73369	2933.4636	1.73436	2942.4974

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.73440	2943.0625	1.73507	2952.1111	1.73573	2961.1736
1/16	1.73444	2943.6276	1.73511	2952.6771	1.73577	2961.7405
1/8	1.73448	2944.1928	1.73515	2953.2432	1.73582	2962.3074
3/16	1.73452	2944.7581	1.73519	2953.8093	1.73586	2962.8744
1/4	1.73457	2945.3234	1.73523	2954.3754	1.73590	2963.4414
5/16	1.73461	2945.8887	1.73527	2954.9417	1.73594	2964.0085
3/8	1.73465	2946.4541	1.73532	2955.5079	1.73598	2964.5756
7/16	1.73469	2947.0196	1.73536	2956.0742	1.73602	2965.1428
1/2	1.73473	2947.5851	1.73540	2956.6406	1.73606	2965.7101
9/16	1.73477	2948.1506	1.73544	2957.2071	1.73611	2966.2774
5/8	1.73482	2948.7163	1.73548	2957.7735	1.73615	2966.8447
11/16	1.73486	2949.2819	1.73552	2958.3401	1.73619	2967.4121
3/4	1.73490	2949.8477	1.73557	2958.9067	1.73623	2967.9796
13/16	1.73494	2950.4134	1.73561	2959.4733	1.73627	2968.5471
7/8	1.73498	2950.9793	1.73565	2960.0400	1.73631	2969.1147
15/16	1.73502	2951.5452	1.73569	2960.6068	1.73636	2969.6823

54′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.73640	2970.2500	1.73706	2979.3403	1.73772	2988.4444
1/16	1.73644	2970.8177	1.73710	2979.9089	1.73776	2989.0139
1/8	1.73648	2971.3855	1.73714	2980.4775	1.73781	2989.5834
3/16	1.73652	2971.9534	1.73718	2981.0463	1.73785	2990.1530
1/4	1.73656	2972.5213	1.73723	2981.6150	1.73789	2990.7227
5/16	1.73660	2973.0892	1.73727	2982.1838	1.73793	2991.2923
3/8	1.73665	2973.6572	1.73731	2982.7527	1.73797	2991.8621
7/16	1.73669	2974.2253	1.73735	2983.3216	1.73801	2992.4319
1/2	1.73673	2974.7934	1.73739	2983.8906	1.73805	2993.0017
9/16	1.73677	2975.3616	1.73743	2984.4597	1.73809	2993.5716
5/8	1.73681	2975.9298	1.73747	2985.0288	1.73814	2994.1416
11/16	1.73685	2976.4981	1.73752	2985.5979	1.73818	2994.7116
3/4	1.73689	2977.0664	1.73756	2986.1671	1.73822	2995.2817
13/16	1.73694	2977.6348	1.73760	2986.7364	1.73826	2995.8518
7/8	1.73698	2978.2032	1.73764	2987.3057	1.73830	2996.4220
15/16	1.73702	2978.7717	1.73768	2987.8750	1.73834	2996.9922

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.73838	2997.5625	1.73904	3006.6944	1.73970	3015.8403
1/16	1.73843	2998.1328	1.73909	3007.2657	1.73975	3016.4124
1/8	1.73847	2998.7032	1.73913	3007.8369	1.73979	3016.9845
3/16	1.73851	2999.2737	1.73917	3008.4082	1.73983	3017.5567
1/4	1.73855	2999.8442	1.73921	3008.9796	1.73987	3018.1289
5/16	1.73859	3000.4147	1.73925	3009.5510	1.73991	3018.7012
3/8	1.73863	3000.9854	1.73929	3010.1225	1.73995	3019.2735
7/16	1.73867	3001.5560	1.73933	3010.6940	1.73999	3019.8459
1/2	1.73871	3002.1267	1.73937	3011.2656	1.74003	3020.4184
9/16	1.73876	3002.6975	1.73942	3011.8373	1.74007	3020.9909
5/8	1.73880	3003.2683	1.73946	3012.4090	1.74012	3021.5635
11/16	1.73884	3003.8392	1.73950	3012.9807	1.74016	3022.1361
3/4	1.73888	3004.4102	1.73954	3013.5525	1.74020	3022.7088
13/16	1.73892	3004.9811	1.73958	3014.1244	1.74024	3023.2815
7/8	1.73896	3005.5522	1.73962	3014.6963	1.74028	3023.8543
15/16	1.73900	3006.1233	1.73966	3015.2683	1.74032	3024.4271

55′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.74036	3025.0000	1.74102	3034.1736	1.74168	3043.3611
1/16	1.74040	3025.5729	1.74106	3034.7474	1.74172	3043.9358
1/8	1.74044	3026.1459	1.74110	3035.3213	1.74176	3044.5105
3/16	1.74049	3026.7190	1.74114	3035.8952	1.74180	3045.0853
1/4	1.74053	3027.2921	1.74118	3036.4692	1.74184	3045.6602
5/16	1.74057	3027.8653	1.74123	3037.0432	1.74188	3046.2351
3/8	1.74061	3028.4385	1.74127	3037.6173	1.74192	3046.8100
7/16	1.74065	3029.0117	1.74131	3038.1914	1.74196	3047.3850
1/2	1.74069	3029.5851	1.74135	3038.7656	1.74200	3047.9601
9/16	1.74073	3030.1584	1.74139	3039.3399	1.74205	3048.5352
5/8	1.74077	3030.7319	1.74143	3039.9142	1.74209	3049.1104
11/16	1.74081	3031.3054	1.74147	3040.4885	1.74213	3049.6856
3/4	1.74086	3031.8789	1.74151	3041.0629	1.74217	3050.2609
13/16	1.74090	3032.4525	1.74155	3041.6374	1.74221	3050.8362
7/8	1.74094	3033.0262	1.74159	3042.2119	1.74225	3051.4116
15/16	1.74098	3033.5999	1.74164	3042.7865	1.74229	3051.9870

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.74233	3052.5625	1.74299	3061.7778	1.74364	3071.0069
1/16	1.74237	3053.1380	1.74303	3062.3542	1.74368	3071.5842
1/8	1.74241	3053.7137	1.74307	3062.9307	1.74372	3072.1616
3/16	1.74246	3054.2893	1.74311	3063.5072	1.74376	3072.7390
1/4	1.74250	3054.8650	1.74315	3064.0838	1.74380	3073.3164
5/16	1.74254	3055.4408	1.74319	3064.6604	1.74384	3073.8939
3/8	1.74258	3056.0166	1.74323	3065.2371	1.74389	3074.4715
7/16	1.74262	3056.5925	1.74327	3065.8138	1.74393	3075.0491
1/2	1.74266	3057.1684	1.74331	3066.3906	1.74397	3075.6267
9/16	1.74270	3057.7444	1.74335	3066.9675	1.74401	3076.2045
5/8	1.74274	3058.3204	1.74340	3067.5444	1.74405	3076.7822
11/16	1.74278	3058.8965	1.74344	3068.1213	1.74409	3077.3601
3/4	1.74282	3059.4727	1.74348	3068.6984	1.74413	3077.9379
13/16	1.74286	3060.0489	1.74352	3069.2754	1.74417	3078.5159
7/8	1.74291	3060.6251	1.74356	3069.8525	1.74421	3079.0939
15/16	1.74295	3061.2014	1.74360	3070.4297	1.74425	3079.6719

55′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.74429	3080.2500	1.74494	3089.5069	1.74560	3098.7778
1/16	1.74433	3080.8282	1.74499	3090.0860	1.74564	3099.3577
1/8	1.74437	3081.4064	1.74503	3090.6650	1.74568	3099.9376
3/16	1.74442	3081.9846	1.74507	3091.2442	1.74572	3100.5176
1/4	1.74446	3082.5629	1.74511	3091.8234	1.74576	3101.0977
5/16	1.74450	3083.1413	1.74515	3092.4026	1.74580	3101.6778
3/8	1.74454	3083.7197	1.74519	3092.9819	1.74584	3102.2579
7/16	1.74458	3084.2982	1.74523	3093.5612	1.74588	3102.8381
1/2	1.74462	3084.8767	1.74527	3094.1406	1.74592	3103.4184
9/16	1.74466	3085.4553	1.74531	3094.7201	1.74596	3103.9987
5/8	1.74470	3086.0340	1.74535	3095.2996	1.74600	3104.5791
11/16	1.74474	3086.6127	1.74539	3095.8792	1.74604	3105.1595
3/4	1.74478	3087.1914	1.74543	3096.4588	1.74608	3105.7400
13/16	1.74482	3087.7702	1.74547	3097.0384	1.74612	3106.3206
7/8	1.74486	3088.3491	1.74551	3097.6182	1.74616	3106.9012
15/16	1.74490	3088.9280	1.74555	3098.1979	1.74620	3107.4818

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.74624	3108.0625	1.74689	3117.3611	1.74754	3126.6736
1/16	1.74629	3108.6433	1.74693	3117.9427	1.74758	3127.2561
1/8	1.74633	3109.2241	1.74697	3118.5244	1.74762	3127.8387
3/16	1.74637	3109.8049	1.74702	3119.1061	1.74766	3128.4213
1/4	1.74641	3110.3859	1.74706	3119.6879	1.74770	3129.0039
5/16	1.74645	3110.9668	1.74710	3120.2698	1.74774	3129.5866
3/8	1.74649	3111.5479	1.74714	3120.8517	1.74778	3130.1694
7/16	1.74653	3112.1289	1.74718	3121.4336	1.74782	3130.7522
1/2	1.74657	3112.7101	1.74722	3122.0156	1.74786	3131.3351
9/16	1.74661	3113.2913	1.74726	3122.5977	1.74791	3131.9180
5/8	1.74665	3113.8725	1.74730	3123.1798	1.74795	3132.5010
11/16	1.74669	3114.4538	1.74734	3123.7620	1.74799	3133.0840
3/4	1.74673	3115.0352	1.74738	3124.3442	1.74803	3133.6671
13/16	1.74677	3115.6166	1.74742	3124.9265	1.74807	3134.2502
7/8	1.74681	3116.1980	1.74746	3125.5088	1.74811	3134.8334
15/16	1.74685	3116.7795	1.74750	3126.0912	1.74815	3135.4167

56′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.74819	3136.0000	1.74883	3145.3403	1.74948	3154.6944
1/16	1.74823	3136.5834	1.74887	3145.9245	1.74952	3155.2795
⅛	1.74827	3137.1668	1.74891	3146.5088	1.74956	3155.8647
3/16	1.74831	3137.7502	1.74895	3147.0931	1.74960	3156.4499
¼	1.74835	3138.3338	1.74900	3147.6775	1.74964	3157.0352
5/16	1.74839	3138.9173	1.74904	3148.2620	1.74968	3157.6205
⅜	1.74843	3139.5010	1.74908	3148.8465	1.74972	3158.2058
7/16	1.74847	3140.0847	1.74912	3149.4310	1.74976	3158.7913
½	1.74851	3140.6684	1.74916	3150.0156	1.74980	3159.3767
9/16	1.74855	3141.2522	1.74920	3150.6003	1.74984	3159.9623
⅝	1.74859	3141.8360	1.74924	3151.1850	1.74988	3160.5479
11/16	1.74863	3142.4199	1.74928	3151.7698	1.74992	3161.1335
¾	1.74867	3143.0039	1.74932	3152.3546	1.74996	3161.7192
13/16	1.74871	3143.5879	1.74936	3152.9395	1.75000	3162.3049
⅞	1.74875	3144.1720	1.74940	3153.5244	1.75004	3162.8907
15/16	1.74879	3144.7561	1.74944	3154.1094	1.75008	3163.4766

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.75012	3164.0625	1.75077	3173.4444	1.75141	3182.8403
1/16	1.75016	3164.6485	1.75081	3174.0313	1.75145	3183.4280
⅛	1.75020	3165.2345	1.75085	3174.6182	1.75149	3184.0157
3/16	1.75024	3165.8206	1.75089	3175.2051	1.75153	3184.6035
¼	1.75028	3166.4067	1.75093	3175.7921	1.75157	3185.1914
5/16	1.75032	3166.9929	1.75097	3176.3792	1.75161	3185.7793
⅜	1.75036	3167.5791	1.75101	3176.9663	1.75165	3186.3673
7/16	1.75040	3168.1654	1.75105	3177.5534	1.75169	3186.9553
½	1.75044	3168.7517	1.75109	3178.1406	1.75173	3187.5434
9/16	1.75048	3169.3381	1.75113	3178.7279	1.75177	3188.1315
⅝	1.75052	3169.9246	1.75117	3179.3152	1.75181	3188.7197
11/16	1.75056	3170.5111	1.75121	3179.9026	1.75185	3189.3080
¾	1.75060	3171.0977	1.75125	3180.4900	1.75189	3189.8963
13/16	1.75064	3171.6843	1.75129	3181.0775	1.75193	3190.4846
⅞	1.75069	3172.2709	1.75133	3181.6650	1.75197	3191.0730
15/16	1.75073	3172.8577	1.75137	3182.2526	1.75201	3191.6615

56′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.75205	3192.2500	1.75269	3201.6736	1.75333	3211.1111
1/16	1.75209	3192.8386	1.75273	3202.2630	1.75337	3211.7014
1/8	1.75213	3193.4272	1.75277	3202.8525	1.75341	3212.2918
3/16	1.75217	3194.0159	1.75281	3203.4421	1.75345	3212.8822
1/4	1.75221	3194.6046	1.75285	3204.0317	1.75349	3213.4727
5/16	1.75225	3195.1934	1.75289	3204.6213	1.75353	3214.0632
3/8	1.75229	3195.7822	1.75293	3205.2110	1.75357	3214.6538
7/16	1.75233	3196.3711	1.75297	3205.8008	1.75361	3215.2444
1/2	1.75237	3196.9601	1.75301	3206.3906	1.75365	3215.8351
9/16	1.75241	3197.5491	1.75305	3206.9805	1.75369	3216.4258
5/8	1.75245	3198.1381	1.75309	3207.5704	1.75373	3217.0166
11/16	1.75249	3198.7272	1.75313	3208.1604	1.75377	3217.6074
3/4	1.75253	3199.3164	1.75317	3208.7504	1.75381	3218.1984
13/16	1.75257	3199.9056	1.75321	3209.3405	1.75385	3218.7893
7/8	1.75261	3200.4949	1.75325	3209.9307	1.75389	3219.3803
15/16	1.75265	3201.0842	1.75329	3210.5209	1.75393	3219.9714

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.75397	3220.5625	1.75460	3230.0278	1.75524	3239.5069
1/16	1.75401	3221.1537	1.75464	3230.6198	1.75528	3240.0999
1/8	1.75405	3221.7449	1.75468	3231.2119	1.75532	3240.6928
3/16	1.75409	3222.3362	1.75472	3231.8041	1.75536	3241.2858
1/4	1.75413	3222.9275	1.75476	3232.3963	1.75540	3241.8789
5/16	1.75417	3223.5189	1.75480	3232.9885	1.75544	3242.4720
3/8	1.75420	3224.1104	1.75484	3233.5808	1.75548	3243.0652
7/16	1.75424	3224.7019	1.75488	3234.1732	1.75552	3243.6584
1/2	1.75428	3225.2934	1.75492	3234.7656	1.75556	3244.2517
9/16	1.75432	3225.8850	1.75496	3235.3581	1.75560	3244.8451
5/8	1.75436	3226.4767	1.75500	3235.9506	1.75564	3245.4385
11/16	1.75440	3227.0684	1.75504	3236.5432	1.75568	3246.0319
3/4	1.75444	3227.6602	1.75508	3237.1359	1.75572	3246.6254
13/16	1.75448	3228.2520	1.75512	3237.7285	1.75576	3247.2190
7/8	1.75452	3228.8439	1.75516	3238.3213	1.75580	3247.8126
15/16	1.75456	3229.4358	1.75520	3238.9141	1.75584	3248.4063

57′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.75587	3249.0000	1.75651	3258.5069	1.75714	3268.0278
1/16	1.75591	3249.5938	1.75655	3259.1016	1.75718	3268.6233
1/8	1.75595	3250.1876	1.75659	3259.6963	1.75722	3269.2189
3/16	1.75599	3250.7815	1.75663	3260.2910	1.75726	3269.8145
1/4	1.75603	3251.3754	1.75667	3260.8859	1.75730	3270.4102
5/16	1.75607	3251.9694	1.75671	3261.4807	1.75734	3271.0059
3/8	1.75611	3252.5635	1.75675	3262.0756	1.75738	3271.6017
7/16	1.75615	3253.1576	1.75679	3262.6706	1.75742	3272.1975
1/2	1.75619	3253.7517	1.75683	3263.2656	1.75746	3272.7934
9/16	1.75623	3254.3459	1.75687	3263.8607	1.75750	3273.3894
5/8	1.75627	3254.9402	1.75691	3264.4558	1.75754	3273.9854
11/16	1.75631	3255.5345	1.75694	3265.0510	1.75758	3274.5814
3/4	1.75635	3256.1289	1.75698	3265.6463	1.75762	3275.1775
13/16	1.75639	3256.7233	1.75702	3266.2416	1.75766	3275.7737
7/8	1.75643	3257.3178	1.75706	3266.8369	1.75770	3276.3699
15/16	1.75647	3257.9124	1.75710	3267.4323	1.75774	3276.9662

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.75778	3277.5625	1.75841	3287.1111	1.75904	3296.6736
1/16	1.75782	3278.1589	1.75845	3287.7084	1.75908	3297.2717
1/8	1.75785	3278.7553	1.75849	3288.3057	1.75912	3297.8699
3/16	1.75789	3279.3518	1.75853	3288.9030	1.75916	3298.4681
1/4	1.75793	3279.9484	1.75856	3289.5004	1.75920	3299.0664
5/16	1.75797	3280.5449	1.75860	3290.0979	1.75923	3299.6647
3/8	1.75801	3281.1416	1.75864	3290.6954	1.75927	3300.2631
7/16	1.75805	3281.7383	1.75868	3291.2930	1.75931	3300.8616
1/2	1.75809	3282.3351	1.75872	3291.8906	1.75935	3301.4601
9/16	1.75813	3282.9319	1.75876	3292.4883	1.75939	3302.0586
5/8	1.75817	3283.5288	1.75880	3293.0860	1.75943	3302.6572
11/16	1.75821	3284.1257	1.75884	3293.6838	1.75947	3303.2559
3/4	1.75825	3284.7227	1.75888	3294.2817	1.75951	3303.8546
13/16	1.75829	3285.3197	1.75892	3294.8796	1.75955	3304.4534
7/8	1.75833	3285.9168	1.75896	3295.4775	1.75959	3305.0522
15/16	1.75837	3286.5139	1.75900	3296.0755	1.75963	3305.6511

57′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.75967	3306.2500	1.76030	3315.8403	1.76092	3325.4444
1/16	1.75971	3306.8490	1.76034	3316.4401	1.76096	3326.0452
1/8	1.75975	3307.4480	1.76038	3317.0400	1.76100	3326.6459
3/16	1.75979	3308.0471	1.76041	3317.6400	1.76104	3327.2468
1/4	1.75983	3308.6463	1.76045	3318.2400	1.76108	3327.8477
5/16	1.75986	3309.2455	1.76049	3318.8401	1.76112	3328.4486
3/8	1.75990	3309.8447	1.76053	3319.4402	1.76116	3329.0496
7/16	1.75994	3310.4440	1.76057	3320.0404	1.76120	3329.6506
1/2	1.75998	3311.0434	1.76061	3320.6406	1.76124	3330.2517
9/16	1.76002	3311.6428	1.76065	3321.2409	1.76128	3330.8529
5/8	1.76006	3312.2423	1.76069	3321.8413	1.76132	3331.4541
11/16	1.76010	3312.8418	1.76073	3322.4417	1.76136	3332.0554
3/4	1.76014	3313.4414	1.76077	3323.0421	1.76140	3332.6567
13/16	1.76018	3314.0410	1.76081	3323.6426	1.76143	3333.2581
7/8	1.76022	3314.6407	1.76085	3324.2432	1.76147	3333.8595
15/16	1.76026	3315.2405	1.76089	3324.8438	1.76151	3334.4610

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.76155	3335.0625	1.76218	3344.6944	1.76280	3354.3403
1/16	1.76159	3335.6641	1.76222	3345.2969	1.76284	3354.9436
1/8	1.76163	3336.2657	1.76226	3345.8994	1.76288	3355.5470
3/16	1.76167	3336.8674	1.76230	3346.5020	1.76292	3356.1504
1/4	1.76171	3337.4692	1.76233	3347.1046	1.76296	3356.7539
5/16	1.76175	3338.0710	1.76237	3347.7073	1.76300	3357.3574
3/8	1.76179	3338.6729	1.76241	3348.3100	1.76304	3357.9610
7/16	1.76183	3339.2748	1.76245	3348.9128	1.76308	3358.5647
1/2	1.76187	3339.8767	1.76249	3349.5156	1.76312	3359.1684
9/16	1.76190	3340.4788	1.76253	3350.1185	1.76315	3359.7722
5/8	1.76194	3341.0808	1.76257	3350.7215	1.76319	3360.3760
11/16	1.76198	3341.6830	1.76261	3351.3245	1.76323	3360.9798
3/4	1.76202	3342.2852	1.76265	3351.9275	1.76327	3361.5838
13/16	1.76206	3342.8874	1.76269	3352.5306	1.76331	3362.1877
7/8	1.76210	3343.4897	1.76273	3353.1338	1.76335	3362.7918
15/16	1.76214	3344.0920	1.76276	3353.7370	1.76339	3363.3959

58′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.76343	3364.0000	1.76405	3373.6736	1.76467	3383.3611
1/16	1.76347	3364.6042	1.76409	3374.2787	1.76471	3383.9670
1/8	1.76351	3365.2084	1.76413	3374.8838	1.76475	3384.5730
3/16	1.76354	3365.8127	1.76417	3375.4890	1.76479	3385.1791
1/4	1.76358	3366.4171	1.76421	3376.0942	1.76483	3385.7852
5/16	1.76362	3367.0215	1.76425	3376.6995	1.76487	3386.3913
3/8	1.76366	3367.6260	1.76429	3377.3048	1.76491	3386.9975
7/16	1.76370	3368.2305	1.76432	3377.9102	1.76495	3387.6038
1/2	1.76374	3368.8351	1.76436	3378.5156	1.76499	3388.2101
9/16	1.76378	3369.4397	1.76440	3379.1211	1.76502	3388.8164
5/8	1.76382	3370.0444	1.76444	3379.7267	1.76506	3389.4229
11/16	1.76386	3370.6491	1.76448	3380.3323	1.76510	3390.0293
3/4	1.76390	3371.2539	1.76452	3380.9379	1.76514	3390.6359
13/16	1.76393	3371.8588	1.76456	3381.5436	1.76518	3391.2424
7/8	1.76397	3372.4637	1.76460	3382.1494	1.76522	3391.8491
15/16	1.76401	3373.0686	1.76464	3382.7552	1.76526	3392.4558

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.76530	3393.0625	1.76592	3402.7778	1.76654	3412.5069
1/16	1.76533	3393.6693	1.76596	3403.3854	1.76658	3413.1155
1/8	1.76537	3394.2762	1.76599	3403.9932	1.76661	3413.7241
3/16	1.76541	3394.8831	1.76603	3404.6009	1.76665	3414.3327
1/4	1.76545	3395.4900	1.76607	3405.2088	1.76669	3414.9414
5/16	1.76549	3396.0970	1.76611	3405.8167	1.76673	3415.5502
3/8	1.76553	3396.7041	1.76615	3406.4246	1.76677	3416.1590
7/16	1.76557	3397.3112	1.76619	3407.0326	1.76681	3416.7678
1/2	1.76561	3397.9184	1.76623	3407.6406	1.76685	3417.3767
9/16	1.76565	3398.5256	1.76627	3408.2487	1.76689	3417.9857
5/8	1.76568	3399.1329	1.76630	3408.8569	1.76692	3418.5947
11/16	1.76572	3399.7403	1.76634	3409.4651	1.76696	3419.2038
3/4	1.76576	3400.3477	1.76638	3410.0734	1.76700	3419.8129
13/16	1.76580	3400.9551	1.76642	3410.6817	1.76704	3420.4221
7/8	1.76584	3401.5626	1.76646	3411.2900	1.76708	3421.0314
15/16	1.76588	3402.1702	1.76650	3411.8985	1.76712	3421.6407

58′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.76716	3422.2500	1.76777	3432.0069	1.76839	3441.7778
1/16	1.76719	3422.8594	1.76781	3432.6172	1.76843	3442.3889
1/8	1.76723	3423.4689	1.76785	3433.2275	1.76847	3443.0001
3/16	1.76727	3424.0784	1.76789	3433.8379	1.76851	3443.6114
1/4	1.76731	3424.6879	1.76793	3434.4484	1.76855	3444.2227
5/16	1.76735	3425.2976	1.76797	3435.0588	1.76858	3444.8340
3/8	1.76739	3425.9072	1.76801	3435.6694	1.76862	3445.4454
7/16	1.76743	3426.5170	1.76804	3436.2800	1.76866	3446.0569
1/2	1.76747	3427.1267	1.76808	3436.8906	1.76870	3446.6684
9/16	1.76750	3427.7366	1.76812	3437.5013	1.76874	3447.2800
5/8	1.76754	3428.3465	1.76816	3438.1121	1.76878	3447.8916
11/16	1.76758	3428.9564	1.76820	3438.7229	1.76882	3448.5033
3/4	1.76762	3429.5664	1.76824	3439.3338	1.76885	3449.1150
13/16	1.76766	3430.1765	1.76828	3439.9447	1.76889	3449.7268
7/8	1.76770	3430.7866	1.76831	3440.5557	1.76893	3450.3387
15/16	1.76774	3431.3967	1.76835	3441.1667	1.76897	3450.9505

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.76901	3451.5625	1.76962	3461.3611	1.77024	3471.1736
1/16	1.76905	3452.1745	1.76966	3461.9740	1.77028	3471.7874
1/8	1.76908	3452.7866	1.76970	3462.5869	1.77031	3472.4012
3/16	1.76912	3453.3987	1.76974	3463.1999	1.77035	3473.0150
1/4	1.76916	3454.0109	1.76978	3463.8129	1.77039	3473.6289
5/16	1.76920	3454.6231	1.76982	3464.4260	1.77043	3474.2429
3/8	1.76924	3455.2354	1.76985	3465.0392	1.77047	3474.8569
7/16	1.76928	3455.8477	1.76989	3465.6524	1.77051	3475.4709
1/2	1.76932	3456.4601	1.76993	3466.2656	1.77055	3476.0851
9/16	1.76935	3457.0725	1.76997	3466.8789	1.77058	3476.6992
5/8	1.76939	3457.6850	1.77001	3467.4923	1.77062	3477.3135
11/16	1.76943	3458.2976	1.77005	3468.1057	1.77066	3477.9278
3/4	1.76947	3458.9102	1.77008	3468.7192	1.77070	3478.5421
13/16	1.76951	3459.5228	1.77012	3469.3327	1.77074	3479.1565
7/8	1.76955	3460.1355	1.77016	3469.9463	1.77078	3479.7709
15/16	1.76959	3460.7483	1.77020	3470.5599	1.77081	3480.3854

59′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.77085	3481.0000	1.77146	3490.8403	1.77208	3500.6944
1/16	1.77089	3481.6146	1.77150	3491.4558	1.77212	3501.3108
1/8	1.77093	3482.2293	1.77154	3492.0713	1.77215	3501.9272
3/16	1.77097	3482.8440	1.77158	3492.6869	1.77219	3502.5436
1/4	1.77101	3483.4588	1.77162	3493.3025	1.77223	3503.1602
5/16	1.77104	3484.0736	1.77166	3493.9182	1.77227	3503.7767
3/8	1.77108	3484.6885	1.77169	3494.5340	1.77231	3504.3933
7/16	1.77112	3485.3034	1.77173	3495.1498	1.77234	3505.0100
1/2	1.77116	3485.9184	1.77177	3495.7656	1.77238	3505.6267
9/16	1.77120	3486.5334	1.77181	3496.3815	1.77242	3506.2435
5/8	1.77124	3487.1485	1.77185	3496.9975	1.77246	3506.8604
11/16	1.77127	3487.7637	1.77189	3497.6135	1.77250	3507.4772
3/4	1.77131	3488.3789	1.77192	3498.2296	1.77254	3508.0942
13/16	1.77135	3488.9942	1.77196	3498.8457	1.77257	3508.7112
7/8	1.77139	3489.6095	1.77200	3499.4619	1.77261	3509.3282
15/16	1.77143	3490.2249	1.77204	3500.0782	1.77265	3509.9453

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.77269	3510.5625	1.77330	3520.4444	1.77391	3530.3403
1/16	1.77273	3511.1797	1.77334	3521.0625	1.77395	3530.9592
1/8	1.77276	3511.7970	1.77337	3521.6807	1.77398	3531.5782
3/16	1.77280	3512.4143	1.77341	3522.2989	1.77402	3532.1973
1/4	1.77284	3513.0317	1.77345	3522.9171	1.77406	3532.8164
5/16	1.77288	3513.6491	1.77349	3523.5354	1.77410	3533.4356
3/8	1.77292	3514.2666	1.77353	3524.1538	1.77414	3534.0548
7/16	1.77296	3514.8841	1.77357	3524.7722	1.77417	3534.6741
1/2	1.77299	3515.5017	1.77360	3525.3906	1.77421	3535.2934
9/16	1.77303	3516.1194	1.77364	3526.0091	1.77425	3535.9128
5/8	1.77307	3516.7371	1.77368	3526.6277	1.77429	3536.5322
11/16	1.77311	3517.3548	1.77372	3527.2463	1.77433	3537.1517
3/4	1.77315	3517.9727	1.77376	3527.8650	1.77436	3537.7713
13/16	1.77318	3518.5905	1.77379	3528.4838	1.77440	3538.3909
7/8	1.77322	3519.2084	1.77383	3529.1025	1.77444	3539.0105
15/16	1.77326	3519.8264	1.77387	3529.7214	1.77448	3539.6302

59′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.77452	3540.2500	1.77512	3550.1736	1.77573	3560.1111
1/16	1.77455	3540.8698	1.77516	3550.7943	1.77577	3560.7327
1/8	1.77459	3541.4897	1.77520	3551.4150	1.77581	3561.3543
3/16	1.77463	3542.1096	1.77524	3552.0358	1.77585	3561.9759
1/4	1.77467	3542.7296	1.77528	3552.6567	1.77588	3562.5977
5/16	1.77471	3543.3496	1.77531	3553.2776	1.77592	3563.2194
3/8	1.77475	3543.9697	1.77535	3553.8985	1.77596	3563.8413
7/16	1.77478	3544.5899	1.77539	3554.5196	1.77600	3564.4631
1/2	1.77482	3545.2101	1.77543	3555.1406	1.77603	3565.0851
9/16	1.77486	3545.8303	1.77547	3555.7617	1.77607	3565.7071
5/8	1.77490	3546.4506	1.77550	3556.3829	1.77611	3566.3291
11/16	1.77493	3547.0710	1.77554	3557.0042	1.77615	3566.9512
3/4	1.77497	3547.6914	1.77558	3557.6254	1.77619	3567.5734
13/16	1.77501	3548.3119	1.77562	3558.2468	1.77622	3568.1956
7/8	1.77505	3548.9324	1.77566	3558.8682	1.77626	3568.8178
15/16	1.77509	3549.5530	1.77569	3559.4896	1.77630	3569.4401

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.77634	3570.0625	1.77694	3580.0278	1.77755	3590.0069
1/16	1.77638	3570.6849	1.77698	3580.6511	1.77759	3590.6311
1/8	1.77641	3571.3074	1.77702	3581.2744	1.77762	3591.2553
3/16	1.77645	3571.9299	1.77706	3581.8978	1.77766	3591.8796
1/4	1.77649	3572.5525	1.77709	3582.5213	1.77770	3592.5039
5/16	1.77653	3573.1752	1.77713	3583.1448	1.77774	3593.1283
3/8	1.77656	3573.7979	1.77717	3583.7683	1.77777	3593.7527
7/16	1.77660	3574.4206	1.77721	3584.3920	1.77781	3594.3772
1/2	1.77664	3575.0434	1.77725	3585.0156	1.77785	3595.0017
9/16	1.77668	3575.6663	1.77728	3585.6394	1.77789	3595.6263
5/8	1.77672	3576.2892	1.77732	3586.2631	1.77793	3596.2510
11/16	1.77675	3576.9121	1.77736	3586.8870	1.77796	3596.8757
3/4	1.77679	3577.5352	1.77740	3587.5109	1.77800	3597.5004
13/16	1.77683	3578.1582	1.77743	3588.1348	1.77804	3598.1252
7/8	1.77687	3578.7814	1.77747	3588.7588	1.77808	3598.7501
15/16	1.77691	3579.4045	1.77751	3589.3828	1.77811	3599.3750

60′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.77815	3600.0000	1.77875	3610.0069	1.77936	3620.0278
1/16	1.77819	3600.6250	1.77879	3610.6328	1.77939	3620.6545
1/8	1.77823	3601.2501	1.77883	3611.2588	1.77943	3621.2814
3/16	1.77826	3601.8752	1.77887	3611.8848	1.77947	3621.9082
1/4	1.77830	3602.5004	1.77890	3612.5109	1.77951	3622.5352
5/16	1.77834	3603.1257	1.77894	3613.1370	1.77954	3623.1621
3/8	1.77838	3603.7510	1.77898	3613.7631	1.77958	3623.7892
7/16	1.77842	3604.3763	1.77902	3614.3894	1.77962	3624.4163
1/2	1.77845	3605.0017	1.77906	3615.0156	1.77966	3625.0434
9/16	1.77849	3605.6272	1.77909	3615.6420	1.77969	3625.6706
5/8	1.77853	3606.2527	1.77913	3616.2683	1.77973	3626.2979
11/16	1.77857	3606.8783	1.77917	3616.8948	1.77977	3626.9252
3/4	1.77860	3607.5039	1.77921	3617.5213	1.77981	3627.5525
13/16	1.77864	3608.1296	1.77924	3618.1478	1.77984	3628.1799
7/8	1.77868	3608.7553	1.77928	3618.7744	1.77988	3628.8074
15/16	1.77872	3609.3811	1.77932	3619.4011	1.77992	3629.4349

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.77996	3630.0625	1.78056	3640.1111	1.78116	3650.1736
1/16	1.77999	3630.6901	1.78059	3640.7396	1.78119	3650.8030
1/8	1.78003	3631.3178	1.78063	3641.3682	1.78123	3651.4324
3/16	1.78007	3631.9456	1.78067	3641.9968	1.78127	3652.0619
1/4	1.78011	3632.5734	1.78071	3642.6254	1.78131	3652.6914
5/16	1.78014	3633.2012	1.78074	3643.2542	1.78134	3653.3210
3/8	1.78018	3633.8291	1.78078	3643.8829	1.78138	3653.9506
7/16	1.78022	3634.4571	1.78082	3644.5117	1.78142	3654.5803
1/2	1.78026	3635.0851	1.78086	3645.1406	1.78146	3655.2101
9/16	1.78029	3635.7131	1.78089	3645.7696	1.78149	3655.8399
5/8	1.78033	3636.3413	1.78093	3646.3985	1.78153	3656.4697
11/16	1.78037	3636.9694	1.78097	3647.0276	1.78157	3657.0996
3/4	1.78041	3637.5977	1.78101	3647.6567	1.78161	3657.7296
13/16	1.78044	3638.2259	1.78104	3648.2858	1.78164	3658.3596
7/8	1.78048	3638.8543	1.78108	3648.9150	1.78168	3658.9897
15/16	1.78052	3639.4827	1.78112	3649.5443	1.78172	3659.6198

60′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.78176	3660.2500	1.78235	3670.3403	1.78295	3680.4444
1/16	1.78179	3660.8802	1.78239	3670.9714	1.78299	3681.0764
1/8	1.78183	3661.5105	1.78243	3671.6025	1.78302	3681.7084
3/16	1.78187	3662.1409	1.78247	3672.2338	1.78306	3682.3405
1/4	1.78190	3662.7713	1.78250	3672.8650	1.78310	3682.9727
5/16	1.78194	3663.4017	1.78254	3673.4963	1.78314	3683.6048
3/8	1.78198	3664.0322	1.78258	3674.1277	1.78317	3684.2371
7/16	1.78202	3664.6628	1.78261	3674.7591	1.78321	3684.8694
1/2	1.78205	3665.2934	1.78265	3675.3906	1.78325	3685.5017
9/16	1.78209	3665.9241	1.78269	3676.0222	1.78329	3686.1341
5/8	1.78213	3666.5548	1.78273	3676.6538	1.78332	3686.7666
11/16	1.78217	3667.1856	1.78276	3677.2854	1.78336	3687.3991
3/4	1.78220	3667.8164	1.78280	3677.9171	1.78340	3688.0317
13/16	1.78224	3668.4473	1.78284	3678.5489	1.78343	3688.6643
7/8	1.78228	3669.0782	1.78288	3679.1807	1.78347	3689.2970
15/16	1.78232	3669.7092	1.78291	3679.8125	1.78351	3689.9297

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.78355	3690.5625	1.78414	3700.6944	1.78474	3710.8403
1/16	1.78358	3691.1953	1.78418	3701.3282	1.78477	3711.4749
1/8	1.78362	3691.8282	1.78422	3701.9619	1.78481	3712.1095
3/16	1.78366	3692.4612	1.78425	3702.5957	1.78485	3712.7442
1/4	1.78370	3693.0942	1.78429	3703.2296	1.78488	3713.3789
5/16	1.78373	3693.7272	1.78433	3703.8635	1.78492	3714.0137
3/8	1.78377	3694.3604	1.78436	3704.4975	1.78496	3714.6485
7/16	1.78381	3694.9935	1.78440	3705.1315	1.78500	3715.2834
1/2	1.78384	3695.6267	1.78444	3705.7656	1.78503	3715.9184
9/16	1.78388	3696.2600	1.78448	3706.3998	1.78507	3716.5534
5/8	1.78392	3696.8933	1.78451	3707.0340	1.78511	3717.1885
11/16	1.78396	3697.5267	1.78455	3707.6682	1.78514	3717.8236
3/4	1.78399	3698.1602	1.78459	3708.3025	1.78518	3718.4588
13/16	1.78403	3698.7936	1.78462	3708.9369	1.78522	3719.0940
7/8	1.78407	3699.4272	1.78466	3709.5713	1.78526	3719.7293
15/16	1.78410	3700.0608	1.78470	3710.2058	1.78529	3720.3646

61′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square:	Log.	Square.
0	1.78533	3721.0000	1.78592	3731.1736	1.78651	3741.3611
1/16	1.78537	3721.6354	1.78596	3731.8099	1.78655	3741.9983
1/8	1.78540	3722.2709	1.78600	3732.4463	1.78659	3742.6355
3/16	1.78544	3722.9065	1.78603	3733.0827	1.78663	3743.2728
1/4	1.78548	3723.5421	1.78607	3733.7192	1.78666	3743.9102
5/16	1.78552	3724.1778	1.78611	3734.3557	1.78670	3744.5476
3/8	1.78555	3724.8135	1.78614	3734.9923	1.78674	3745.1850
7/16	1.78559	3725.4492	1.78618	3735.6289	1.78677	3745.8225
1/2	1.78563	3726.0851	1.78622	3736.2656	1.78681	3746.4601
9/16	1.78566	3726.7209	1.78626	3736.9024	1.78685	3747.0977
5/8	1.78570	3727.3569	1.78629	3737.5392	1.78688	3747.7354
11/16	1.78574	3727.9929	1.78633	3738.1760	1.78692	3748.3731
3/4	1.78577	3728.6289	1.78637	3738.8129	1.78696	3749.0109
13/16	1.78581	3729.2650	1.78640	3739.4499	1.78700	3749.6487
7/8	1.78585	3729.9012	1.78644	3740.0869	1.78703	3750.2866
15/16	1.78589	3730.5374	1.78648	3740.7240	1.78707	3750.9245

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.78711	3751.5625	1.78770	3761.7778	1.78829	3772.0069
1/16	1.78714	3752.2005	1.78773	3762.4167	1.78832	3772.6467
1/8	1.78718	3752.8387	1.78777	3763.0557	1.78836	3773.2866
3/16	1.78722	3753.4768	1.78781	3763.6947	1.78840	3773.9265
1/4	1.78725	3754.1150	1.78784	3764.3338	1.78843	3774.5664
5/16	1.78729	3754.7533	1.78788	3764.9729	1.78847	3775.2064
3/8	1.78733	3755.3916	1.78792	3765.6121	1.78851	3775.8465
7/16	1.78736	3756.0300	1.78795	3766.2513	1.78854	3776.4866
1/2	1.78740	3756.6684	1.78799	3766.8906	1.78858	3777.1267
9/16	1.78744	3757.3069	1.78803	3767.5300	1.78862	3777.7670
5/8	1.78748	3757.9454	1.78807	3768.1694	1.78865	3778.4072
11/16	1.78751	3758.5840	1.78810	3768.8088	1.78869	3779.0476
3/4	1.78755	3759.2227	1.78814	3769.4484	1.78873	3779.6879
13/16	1.78759	3759.8614	1.78818	3770.0879	1.78876	3780.3284
7/8	1.78762	3760.5001	1.78821	3770.7275	1.78880	3780.9689
15/16	1.78766	3761.1389	1.78825	3771.3672	1.78884	3781.6094

61′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.78888	3782.2500	1.78946	3792.5069	1.79005	3802.7778
1/16	1.78891	3782.8907	1.78950	3793.1485	1.79009	3803.4202
1/8	1.78895	3783.5314	1.78954	3793.7900	1.79012	3804.0626
3/16	1.78899	3784.1721	1.78957	3794.4317	1.79016	3804.7051
1/4	1.78902	3784.8129	1.78961	3795.0734	1.79020	3805.3477
5/16	1.78906	3785.4538	1.78965	3795.7151	1.79023	3805.9903
3/8	1.78910	3786.0947	1.78968	3796.3569	1.79027	3806.6329
7/16	1.78913	3786.7357	1.78972	3796.9987	1.79031	3807.2756
1/2	1.78917	3787.3767	1.78976	3797.6406	1.79034	3807.9184
9/16	1.78921	3788.0178	1.78979	3798.2826	1.79038	3808.5612
5/8	1.78924	3788.6590	1.78983	3798.9246	1.79042	3809.2041
11/16	1.78928	3789.3002	1.78987	3799.5667	1.79045	3809.8470
3/4	1.78932	3789.9414	1.78990	3800.2088	1.79049	3810.4900
13/16	1.78935	3790.5827	1.78994	3800.8509	1.79053	3811.1331
7/8	1.78939	3791.2241	1.78998	3801.4932	1.79056	3811.7762
15/16	1.78943	3791.8655	1.79001	3802.1354	1.79060	3812.4193

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.79064	3813.0625	1.79122	3823.3611	1.79181	3833.6736
1/16	1.79067	3813.7058	1.79126	3824.0052	1.79184	3834.3186
1/8	1.79071	3814.3491	1.79130	3824.6494	1.79188	3834.9637
3/16	1.79075	3814.9924	1.79133	3825.2936	1.79192	3835.6088
1/4	1.79078	3815.6359	1.79137	3825.9379	1.79195	3836.2539
5/16	1.79082	3816.2793	1.79141	3826.5823	1.79199	3836.8991
3/8	1.79086	3816.9229	1.79144	3827.2267	1.79203	3837.5444
7/16	1.79089	3817.5664	1.79148	3827.8711	1.79206	3838.1897
1/2	1.79093	3818.2101	1.79152	3828.5156	1.79210	3838.8351
9/16	1.79097	3818.8538	1.79155	3829.1602	1.79214	3839.4805
5/8	1.79100	3819.4975	1.79159	3829.8048	1.79217	3840.1260
11/16	1.79104	3820.1413	1.79162	3830.4495	1.79221	3840.7715
3/4	1.79108	3820.7852	1.79166	3831.0942	1.79225	3841.4171
13/16	1.79111	3821.4291	1.79170	3831.7390	1.79228	3842.0627
7/8	1.79115	3822.0730	1.79173	3832.3838	1.79232	3842.7084
15/16	1.79119	3822.7170	1.79177	3833.0287	1.79236	3843.3542

62′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.79239	3844.0000	1.79298	3854.3403	1.79356	3864.6944
1/16	1.79243	3844.6459	1.79301	3854.9870	1.79359	3865.3420
1/8	1.79246	3845.2918	1.79305	3855.6338	1.79363	3865.9897
3/16	1.79250	3845.9377	1.79308	3856.2806	1.79367	3866.6374
1/4	1.79254	3846.5838	1.79312	3856.9275	1.79370	3867.2852
5/16	1.79257	3847.2298	1.79316	3857.5745	1.79374	3867.9330
3/8	1.79261	3847.8760	1.79319	3858.2215	1.79378	3868.5808
7/16	1.79265	3848.5222	1.79323	3858.8685	1.79381	3869.2288
1/2	1.79268	3849.1684	1.79327	3859.5156	1.79385	3869.8767
9/16	1.79272	3849.8147	1.79330	3860.1628	1.79388	3870.5248
5/8	1.79276	3850.4610	1.79334	3860.8100	1.79392	3871.1729
11/16	1.79279	3851.1074	1.79338	3861.4573	1.79396	3871.8210
3/4	1.79283	3851.7539	1.79341	3862.1046	1.79399	3872.4692
13/16	1.79287	3852.4004	1.79345	3862.7520	1.79403	3873.1174
7/8	1.79290	3853.0470	1.79348	3863.3994	1.79407	3873.7657
15/16	1.79294	3853.6936	1.79352	3864.0469	1.79410	3874.4141

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.79414	3875.0625	1.79472	3885.4444	1.79530	3895.8403
1/16	1.79418	3875.7110	1.79476	3886.0938	1.79534	3896.4905
1/8	1.79421	3876.3595	1.79479	3886.7432	1.79537	3897.1407
3/16	1.79425	3877.0081	1.79483	3887.3926	1.79541	3897.7910
1/4	1.79428	3877.6567	1.79487	3888.0421	1.79545	3898.4414
5/16	1.79432	3878.3054	1.79490	3888.6917	1.79548	3899.0918
3/8	1.79436	3878.9541	1.79494	3889.3413	1.79552	3899.7423
7/16	1.79439	3879.6029	1.79497	3889.9909	1.79555	3900.3928
1/2	1.79443	3880.2517	1.79501	3890.6406	1.79559	3901.0434
9/16	1.79447	3880.9006	1.79505	3891.2904	1.79563	3901.6940
5/8	1.79450	3881.5496	1.79508	3891.9402	1.79566	3902.3447
11/16	1.79454	3882.1986	1.79512	3892.5901	1.79570	3902.9955
3/4	1.79458	3882.8477	1.79516	3893.2400	1.79574	3903.6463
13/16	1.79461	3883.4968	1.79519	3893.8900	1.79577	3904.2971
7/8	1.79465	3884.1459	1.79523	3894.5400	1.79581	3904.9480
15/16	1.79468	3884.7952	1.79526	3895.1901	1.79584	3905.5990

62′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.79588	3906.2500	1.79646	3916.6736	1.79704	3927.1111
1/16	1.79592	3906.9011	1.79649	3917.3255	1.79707	3927.7639
1/8	1.79595	3907.5522	1.79653	3917.9775	1.79711	3928.4168
3/16	1.79599	3908.2034	1.79657	3918.6296	1.79714	3929.0697
1/4	1.79602	3908.8546	1.79660	3919.2817	1.79718	3929.7227
5/16	1.79606	3909.5059	1.79664	3919.9338	1.79722	3930.3757
3/8	1.79610	3910.1572	1.79668	3920.5860	1.79725	3931.0288
7/16	1.79613	3910.8086	1.79671	3921.2383	1.79729	3931.6819
1/2	1.79617	3911.4601	1.79675	3921.8906	1.79733	3932.3351
9/16	1.79621	3912.1116	1.79678	3922.5430	1.79736	3932.9883
5/8	1.79624	3912.7631	1.79682	3923.1954	1.79740	3933.6416
11/16	1.79628	3913.4147	1.79686	3923.8479	1.79743	3934.2949
3/4	1.79631	3914.0664	1.79689	3924.5004	1.79747	3934.9484
13/16	1.79635	3914.7181	1.79693	3925.1530	1.79751	3935.6018
7/8	1.79639	3915.3699	1.79696	3925.8057	1.79754	3936.2553
15/16	1.79642	3916.0217	1.79700	3926.4584	1.79758	3936.9089

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.79761	3937.5625	1.79819	3948.0278	1.79877	3958.5069
1/16	1.79765	3938.2162	1.79823	3948.6823	1.79880	3959.1624
1/8	1.79769	3938.8699	1.79826	3949.3369	1.79884	3959.8178
3/16	1.79772	3939.5237	1.79830	3949.9916	1.79887	3960.4733
1/4	1.79776	3940.1775	1.79833	3950.6463	1.79891	3961.1289
5/16	1.79779	3940.8314	1.79837	3951.3010	1.79895	3961.7845
3/8	1.79783	3941.4854	1.79841	3951.9558	1.79898	3962.4402
7/16	1.79787	3942.1394	1.79844	3952.6107	1.79902	3963.0959
1/2	1.79790	3942.7934	1.79848	3953.2656	1.79905	3963.7517
9/16	1.79794	3943.4475	1.79851	3953.9206	1.79909	3964.4076
5/8	1.79797	3944.1017	1.79855	3954.5756	1.79913	3965.0635
11/16	1.79801	3944.7559	1.79859	3955.2307	1.79916	3965.7194
3/4	1.79805	3945.4102	1.79862	3955.8859	1.79920	3966.3754
13/16	1.79808	3946.0645	1.79866	3956.5410	1.79923	3967.0315
7/8	1.79812	3946.7189	1.79869	3957.1963	1.79927	3967.6876
15/16	1.79815	3947.3733	1.79873	3957.8516	1.79930	3968.3438

63′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.79934	3969.0000	1.79991	3979.5069	1.80049	3990.0278
1⁄16	1.79938	3969.6563	1.79995	3980.1641	1.80052	3990.6858
⅛	1.79941	3970.3126	1.79999	3980.8213	1.80056	3991.3439
3⁄16	1.79945	3970.9690	1.80002	3981.4785	1.80060	3992.0020
¼	1.79948	3971.6254	1.80006	3982.1359	1.80063	3992.6602
5⁄16	1.79952	3972.2819	1.80009	3982.7932	1.80067	3993.3184
⅜	1.79956	3972.9385	1.80013	3983.4506	1.80070	3993.9767
7⁄16	1.79959	3973.5951	1.80017	3984.1081	1.80074	3994.6350
½	1.79963	3974.2517	1.80020	3984.7656	1.80077	3995.2934
9⁄16	1.79966	3974.9084	1.80024	3985.4232	1.80081	3995.9519
⅝	1.79970	3975.5652	1.80027	3986.0808	1.80085	3996.6104
11⁄16	1.79974	3976.2220	1.80031	3986.7385	1.80088	3997.2689
¾	1.79977	3976.8789	1.80034	3987.3963	1.80092	3997.9275
13⁄16	1.79981	3977.5358	1.80038	3988.0541	1.80095	3998.5862
⅞	1.79984	3978.1928	1.80042	3988.7119	1.80099	3999.2449
15⁄16	1.79988	3978.8499	1.80045	3989.3698	1.80102	3999.9037

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.80106	4000.5625	1.80163	4011.1111	1.80220	4021.6736
1⁄16	1.80110	4001.2214	1.80167	4011.7709	1.80224	4022.3342
⅛	1.80113	4001.8803	1.80170	4012.4307	1.80227	4022.9949
3⁄16	1.80117	4002.5393	1.80174	4013.0905	1.80231	4023.6556
¼	1.80120	4003.1984	1.80178	4013.7504	1.80235	4024.3164
5⁄16	1.80124	4003.8574	1.80181	4014.4104	1.80238	4024.9772
⅜	1.80128	4004.5166	1.80185	4015.0704	1.80242	4025.6381
7⁄16	1.80131	4005.1758	1.80188	4015.7305	1.80245	4026.2991
½	1.80135	4005.8351	1.80192	4016.3906	1.80249	4026.9601
9⁄16	1.80138	4006.4944	1.80195	4017.0508	1.80252	4027.6211
⅝	1.80142	4007.1538	1.80199	4017.7110	1.80256	4028.2822
11⁄16	1.80145	4007.8132	1.80203	4018.3713	1.80260	4028.9434
¾	1.80149	4008.4727	1.80206	4019.0317	1.80263	4029.6046
13⁄16	1.80153	4009.1322	1.80210	4019.6921	1.80267	4030.2659
⅞	1.80156	4009.7918	1.80213	4020.3525	1.80270	4030.9272
15⁄16	1.80160	4010.4514	1.80217	4021.0130	1.80274	4031.5886

63′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.80277	4032.2500	1.80334	4042.8403	1.80391	4053.4444
1/16	1.80281	4032.9115	1.80338	4043.5026	1.80395	4054.1077
1/8	1.80284	4033.5730	1.80341	4044.1650	1.80398	4054.7709
3/16	1.80288	4034.2346	1.80345	4044.8275	1.80402	4055.4343
1/4	1.80292	4034.8963	1.80349	4045.4900	1.80405	4056.0977
5/16	1.80295	4035.5580	1.80352	4046.1526	1.80409	4056.7611
3/8	1.80299	4036.2197	1.80356	4046.8152	1.80413	4057.4246
7/16	1.80302	4036.8815	1.80359	4047.4779	1.80416	4058.0881
1/2	1.80306	4037.5434	1.80363	4048.1406	1.80420	4058.7517
9/16	1.80309	4038.2053	1.80366	4048.8034	1.80423	4059.4154
5/8	1.80313	4038.8673	1.80370	4049.4663	1.80427	4060.0791
11/16	1.80317	4039.5293	1.80373	4050.1292	1.80430	4060.7429
3/4	1.80320	4040.1914	1.80377	4050.7921	1.80434	4061.4067
13/16	1.80324	4040.8535	1.80381	4051.4551	1.80437	4062.0706
7/8	1.80327	4041.5157	1.80384	4052.1182	1.80441	4062.7345
15/16	1.80331	4042.1780	1.80388	4052.7813	1.80444	4063.3985

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.80448	4064.0625	1.80505	4074.6944	1.80561	4085.3403
1/16	1.80452	4064.7266	1.80508	4075.3594	1.80565	4086.0061
1/8	1.80455	4065.3907	1.80512	4076.0244	1.80568	4086.6720
3/16	1.80459	4066.0549	1.80515	4076.6895	1.80572	4087.3379
1/4	1.80462	4066.7192	1.80519	4077.3546	1.80576	4088.0039
5/16	1.80466	4067.3835	1.80522	4078.0198	1.80579	4088.6699
3/8	1.80469	4068.0479	1.80526	4078.6850	1.80583	4089.3360
7/16	1.80473	4068.7123	1.80530	4079.3503	1.80586	4090.0022
1/2	1.80476	4069.3767	1.80533	4080.0156	1.80590	4090.6684
9/16	1.80480	4070.0413	1.80537	4080.6810	1.80593	4091.3347
5/8	1.80483	4070.7058	1.80540	4081.3465	1.80597	4092.0010
11/16	1.80487	4071.3705	1.80544	4082.0120	1.80600	4092.6673
3/4	1.80491	4072.0352	1.80547	4082.6775	1.80604	4093.3338
13/16	1.80494	4072.6999	1.80551	4083.3431	1.80607	4094.0002
7/8	1.80498	4073.3647	1.80554	4084.0088	1.80611	4094.6668
15/16	1.80501	4074.0295	1.80558	4084.6745	1.80614	4095.3334

64′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.80618	4096.0000	1.80675	4106.6736	1.80731	4117.3611
1/16	1.80622	4096.6667	1.80678	4107.3412	1.80734	4118.0295
1/8	1.80625	4097.3334	1.80682	4108.0088	1.80738	4118.6980
3/16	1.80629	4098.0002	1.80685	4108.6765	1.80742	4119.3666
1/4	1.80632	4098.6671	1.80689	4109.3442	1.80745	4120.0352
5/16	1.80636	4099.3340	1.80692	4110.0120	1.80749	4120.7038
3/8	1.80639	4100.0010	1.80696	4110.6798	1.80752	4121.3725
7/16	1.80643	4100.6680	1.80699	4111.3477	1.80756	4122.0413
1/2	1.80646	4101.3351	1.80703	4112.0156	1.80759	4122.7101
9/16	1.80650	4102.0022	1.80706	4112.6836	1.80763	4123.3789
5/8	1.80653	4102.6694	1.80710	4113.3517	1.80766	4124.0479
11/16	1.80657	4103.3366	1.80713	4114.0198	1.80770	4124.7168
3/4	1.80660	4104.0039	1.80717	4114.6879	1.80773	4125.3859
13/16	1.80664	4104.6713	1.80720	4115.3561	1.80777	4126.0549
7/8	1.80667	4105.3387	1.80724	4116.0244	1.80780	4126.7241
15/16	1.80671	4106.0061	1.80727	4116.6927	1.80784	4127.3933

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.80787	4128.0625	1.80844	4138.7778	1.80900	4149.5069
1/16	1.80791	4128.7318	1.80847	4139.4479	1.80903	4150.1780
1/8	1.80794	4129.4012	1.80851	4140.1182	1.80907	4150.8491
3/16	1.80798	4130.0706	1.80854	4140.7884	1.80910	4151.5202
1/4	1.80801	4130.7400	1.80858	4141.4588	1.80914	4152.1914
5/16	1.80805	4131.4095	1.80861	4142.1292	1.80917	4152.8627
3/8	1.80808	4132.0791	1.80865	4142.7996	1.80921	4153.5340
7/16	1.80812	4132.7487	1.80868	4143.4701	1.80924	4154.2053
1/2	1.80815	4133.4184	1.80872	4144.1406	1.80928	4154.8767
9/16	1.80819	4134.0881	1.80875	4144.8112	1.80931	4155.5482
5/8	1.80823	4134.7579	1.80879	4145.4819	1.80935	4156.2197
11/16	1.80826	4135.4278	1.80882	4146.1526	1.80938	4156.8913
3/4	1.80830	4136.0977	1.80886	4146.8234	1.80942	4157.5629
13/16	1.80833	4136.7676	1.80889	4147.4942	1.80945	4158.2346
7/8	1.80837	4137.4376	1.80893	4148.1650	1.80949	4158.9064
15/16	1.80840	4138.1077	1.80896	4148.8360	1.80952	4159.5782

64′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.80956	4160.2500	1.81012	4171.0069	1.81068	4181.7778
1/16	1.80959	4160.9219	1.81016	4171.6797	1.81072	4182.4514
1/8	1.80963	4161.5939	1.81019	4172.3525	1.81075	4183.1251
3/16	1.80966	4162.2659	1.81023	4173.0254	1.81079	4183.7989
1/4	1.80970	4162.9379	1.81026	4173.6984	1.81082	4184.4727
5/16	1.80974	4163.6101	1.81030	4174.3713	1.81086	4185.1465
3/8	1.80977	4164.2822	1.81033	4175.0444	1.81089	4185.8204
7/16	1.80981	4164.9545	1.81037	4175.7175	1.81093	4186.4944
1/2	1.80984	4165.6267	1.81040	4176.3906	1.81096	4187.1684
9/16	1.80988	4166.2991	1.81044	4177.0638	1.81100	4187.8425
5/8	1.80991	4166.9715	1.81047	4177.7371	1.81103	4188.5166
11/16	1.80995	4167.6439	1.81051	4178.4104	1.81107	4189.1908
3/4	1.80998	4168.3164	1.81054	4179.0838	1.81110	4189.8650
13/16	1.81002	4168.9890	1.81058	4179.7572	1.81113	4190.5393
7/8	1.81005	4169.6616	1.81061	4180.4307	1.81117	4191.2137
15/16	1.81009	4170.3342	1.81065	4181.1042	1.81120	4191.8880

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.81124	4192.5625	1.81180	4203.3611	1.81236	4214.1736
1/16	1.81127	4193.2370	1.81183	4204.0365	1.81239	4214.8499
1/8	1.81131	4193.9116	1.81187	4204.7119	1.81243	4215.5262
3/16	1.81134	4194.5862	1.81190	4205.3874	1.81246	4216.2025
1/4	1.81138	4195.2609	1.81194	4206.0629	1.81250	4216.8789
5/16	1.81141	4195.9356	1.81197	4206.7385	1.81253	4217.5554
3/8	1.81145	4196.6104	1.81201	4207.4142	1.81257	4218.2319
7/16	1.81148	4197.2852	1.81204	4208.0899	1.81260	4218.9084
1/2	1.81152	4197.9601	1.81208	4208.7656	1.81263	4219.5851
9/16	1.81155	4198.6350	1.81211	4209.4414	1.81267	4220.2617
5/8	1.81159	4199.3100	1.81215	4210.1173	1.81270	4220.9385
11/16	1.81162	4199.9851	1.81218	4210.7932	1.81274	4221.6153
3/4	1.81166	4200.6602	1.81222	4211.4692	1.81277	4222.2921
13/16	1.81169	4201.3353	1.81225	4212.1452	1.81281	4222.9690
7/8	1.81173	4202.0105	1.81229	4212.8213	1.81284	4223.6459
15/16	1.81176	4202.6858	1.81232	4213.4974	1.81288	4224.3229

65′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.81291	4225.0000	1.81347	4235.8403	1.81403	4246.6944
1/16	1.81295	4225.6771	1.81350	4236.5183	1.81406	4247.3733
1/8	1.81298	4226.3543	1.81354	4237.1963	1.81409	4248.0522
3/16	1.81302	4227.0315	1.81357	4237.8744	1.81413	4248.7311
1/4	1.81305	4227.7088	1.81361	4238.5525	1.81416	4249.4102
5/16	1.81309	4228.3861	1.81364	4239.2307	1.81420	4250.0892
3/8	1.81312	4229.0635	1.81368	4239.9090	1.81423	4250.7683
7/16	1.81316	4229.7409	1.81371	4240.5873	1.81427	4251.4475
1/2	1.81319	4230.4184	1.81375	4241.2656	1.81430	4252.1267
9/16	1.81323	4231.0959	1.81378	4241.9440	1.81434	4252.8060
5/8	1.81326	4231.7735	1.81382	4242.6225	1.81437	4253.4854
11/16	1.81330	4232.4512	1.81385	4243.3010	1.81441	4254.1647
3/4	1.81333	4233.1289	1.81389	4243.9796	1.81444	4254.8442
13/16	1.81337	4233.8067	1.81392	4244.6582	1.81448	4255.5237
7/8	1.81340	4234.4845	1.81396	4245.3369	1.81451	4256.2032
15/16	1.81344	4235.1624	1.81399	4246.0157	1.81455	4256.8828

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.81458	4257.5625	1.81513	4268.4444	1.81569	4279.3403
1/16	1.81462	4258.2422	1.81517	4269.1250	1.81572	4280.0217
1/8	1.81465	4258.9220	1.81520	4269.8057	1.81576	4280.7032
3/16	1.81468	4259.6018	1.81524	4270.4864	1.81579	4281.3848
1/4	1.81472	4260.2817	1.81527	4271.1671	1.81583	4282.0664
5/16	1.81475	4260.9616	1.81531	4271.8479	1.81586	4282.7481
3/8	1.81479	4261.6416	1.81534	4272.5288	1.81590	4283.4298
7/16	1.81482	4262.3216	1.81538	4273.2097	1.81593	4284.1116
1/2	1.81486	4263.0017	1.81541	4273.8906	1.81596	4284.7934
9/16	1.81489	4263.6819	1.81545	4274.5716	1.81600	4285.4753
5/8	1.81493	4264.3621	1.81548	4275.2527	1.81603	4286.1572
11/16	1.81496	4265.0423	1.81552	4275.9338	1.81607	4286.8392
3/4	1.81500	4265.7227	1.81555	4276.6150	1.81610	4287.5213
13/16	1.81503	4266.4030	1.81558	4277.2963	1.81614	4288.2034
7/8	1.81507	4267.0834	1.81562	4277.9775	1.81617	4288.8855
15/16	1.81510	4267.7639	1.81565	4278.6589	1.81621	4289.5677

65′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.81624	4290.2500	1.81679	4301.1736	1.81734	4312.1111
1/16	1.81628	4290.9323	1.81683	4301.8568	1.81738	4312.7952
1/8	1.81631	4291.6147	1.81686	4302.5400	1.81741	4313.4793
3/16	1.81634	4292.2971	1.81690	4303.2233	1.81745	4314.1634
1/4	1.81638	4292.9796	1.81693	4303.9067	1.81748	4314.8477
5/16	1.81641	4293.6621	1.81697	4304.5901	1.81752	4315.5319
3/8	1.81645	4294.3447	1.81700	4305.2735	1.81755	4316.2163
7/16	1.81648	4295.0274	1.81703	4305.9571	1.81759	4316.9006
1/2	1.81652	4295.7101	1.81707	4306.6406	1.81762	4317.5851
9/16	1.81655	4296.3928	1.81710	4307.3242	1.81765	4318.2696
5/8	1.81659	4297.0756	1.81714	4308.0079	1.81769	4318.9541
11/16	1.81662	4297.7585	1.81717	4308.6917	1.81772	4319.6387
3/4	1.81666	4298.4414	1.81721	4309.3754	1.81776	4320.3234
13/16	1.81669	4299.1244	1.81724	4310.0593	1.81779	4321.0081
7/8	1.81672	4299.8074	1.81728	4310.7432	1.81783	4321.6928
15/16	1.81676	4300.4905	1.81731	4311.4271	1.81786	4322.3776

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.81790	4323.0625	1.81845	4334.0278	1.81900	4345.0069
1/16	1.81793	4323.7474	1.81848	4334.7136	1.81903	4345.6936
1/8	1.81796	4324.4324	1.81851	4335.3994	1.81906	4346.3803
3/16	1.81800	4325.1174	1.81855	4336.0853	1.81910	4347.0671
1/4	1.81803	4325.8025	1.81858	4336.7713	1.81913	4347.7539
5/16	1.81807	4326.4877	1.81862	4337.4573	1.81917	4348.4408
3/8	1.81810	4327.1729	1.81865	4338.1433	1.81920	4349.1277
7/16	1.81814	4327.8581	1.81869	4338.8295	1.81924	4349.8147
1/2	1.81817	4328.5434	1.81872	4339.5156	1.81927	4350.5017
9/16	1.81821	4329.2288	1.81875	4340.2019	1.81930	4351.1888
5/8	1.81824	4329.9142	1.81879	4340.8881	1.81934	4351.8760
11/16	1.81827	4330.5996	1.81882	4341.5745	1.81937	4352.5632
3/4	1.81831	4331.2852	1.81886	4342.2609	1.81941	4353.2504
13/16	1.81834	4331.9707	1.81889	4342.9473	1.81944	4353.9377
7/8	1.81838	4332.6564	1.81893	4343.6338	1.81948	4354.6251
15/16	1.81841	4333.3420	1.81896	4344.3203	1.81951	4355.3125

66′

Fraction of an inch	0″ Log.	0″ Square.	1″ Log.	1″ Square.	2″ Log.	2″ Square.
0	1.81954	4356.0000	1.82009	4367.0069	1.82064	4378.0278
1/16	1.81958	4356.6875	1.82013	4367.6953	1.82067	4378.7170
⅛	1.81961	4357.3751	1.82016	4368.3838	1.82071	4379.4064
3/16	1.81965	4358.0627	1.82019	4369.0723	1.82074	4380.0957
¼	1.81968	4358.7504	1.82023	4369.7609	1.82078	4380.7852
5/16	1.81972	4359.4382	1.82026	4370.4495	1.82081	4381.4746
⅜	1.81975	4360.1260	1.82030	4371.1381	1.82084	4382.1642
7/16	1.81978	4360.8138	1.82033	4371.8269	1.82088	4382.8538
½	1.81982	4361.5017	1.82037	4372.5156	1.82091	4383.5434
9/16	1.81985	4362.1897	1.82040	4373.2045	1.82095	4384.2331
⅝	1.81989	4362.8777	1.82043	4373.8933	1.82098	4384.9229
11/16	1.81992	4363.5658	1.82047	4374.5823	1.82102	4385.6127
¾	1.81996	4364.2539	1.82050	4375.2713	1.82105	4386.3025
13/16	1.81999	4364.9421	1.82054	4375.9603	1.82108	4386.9924
⅞	1.82002	4365.6303	1.82057	4376.6494	1.82112	4387.6824
15/16	1.82006	4366.3186	1.82061	4377.3386	1.82115	4388.3724

Fraction of an inch	3″ Log.	3″ Square.	4″ Log.	4″ Square.	5″ Log.	5″ Square.
0	1.82119	4389.0625	1.82173	4400.1111	1.82228	4411.1736
1/16	1.82122	4389.7526	1.82177	4400.8021	1.82231	4411.8655
⅛	1.82125	4390.4428	1.82180	4401.4932	1.82235	4412.5574
3/16	1.82129	4391.1331	1.82183	4402.1843	1.82238	4413.2494
¼	1.82132	4391.8234	1.82187	4402.8754	1.82241	4413.9414
5/16	1.82136	4392.5137	1.82190	4403.5667	1.82245	4414.6335
⅜	1.82139	4393.2041	1.82194	4404.2579	1.82248	4415.3256
7/16	1.82142	4393.8946	1.82197	4404.9492	1.82252	4416.0178
½	1.82146	4394.5851	1.82200	4405.6406	1.82255	4416.7101
9/16	1.82149	4395.2756	1.82204	4406.3321	1.82258	4417.4024
⅝	1.82153	4395.9663	1.82207	4407.0235	1.82262	4418.0947
11/16	1.82156	4396.6569	1.82211	4407.7151	1.82265	4418.7871
¾	1.82160	4397.3477	1.82214	4408.4067	1.82269	4419.4796
13/16	1.82163	4398.0384	1.82217	4409.0983	1.82272	4420.1721
⅞	1.82166	4398.7293	1.82221	4409.7900	1.82275	4420.8647
15/16	1.82170	4399.4202	1.82224	4410.4818	1.82279	4421.5573

66′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.82282	4422.2500	1.82337	4433.3403	1.82391	4444.4444
1/16	1.82286	4422.9427	1.82340	4434.0339	1.82394	4445.1389
⅛	1.82289	4423.6355	1.82343	4434.7275	1.82398	4445.8334
3/16	1.82292	4424.3284	1.82347	4435.4213	1.82401	4446.5280
¼	1.82296	4425.0213	1.82350	4436.1150	1.82404	4447.2227
5/16	1.82299	4425.7142	1.82354	4436.8088	1.82408	4447.9173
⅜	1.82303	4426.4072	1.82357	4437.5027	1.82411	4448.6121
7/16	1.82306	4427.1003	1.82360	4438.1966	1.82415	4449.3069
½	1.82309	4427.7934	1.82364	4438.8906	1.82418	4450.0017
9/16	1.82313	4428.4866	1.82367	4439.5847	1.82421	4450.6966
⅝	1.82316	4429.1798	1.82371	4440.2788	1.82425	4451.3916
11/16	1.82320	4429.8731	1.82374	4440.9729	1.82428	4452.0866
¾	1.82323	4430.5664	1.82377	4441.6671	1.82432	4452.7817
13/16	1.82326	4431.2598	1.82381	4442.3614	1.82435	4453.4768
⅞	1.82330	4431.9532	1.82384	4443.0557	1.82438	4454.1720
15/16	1.82333	4432.6467	1.82387	4443.7500	1.82442	4454.8672

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.82445	4455.5625	1.82499	4466.6944	1.82553	4477.8403
1/16	1.82449	4456.2578	1.82503	4467.3907	1.82557	4478.5374
⅛	1.82452	4456.9532	1.82506	4468.0869	1.82560	4479.2345
3/16	1.82455	4457.6487	1.82509	4468.7832	1.82564	4479.9317
¼	1.82459	4458.3442	1.82513	4469.4796	1.82567	4480.6289
5/16	1.82462	4459.0397	1.82516	4470.1760	1.82570	4481.3262
⅜	1.82465	4459.7354	1.82520	4470.8725	1.82574	4482.0235
7/16	1.82469	4460.4310	1.82523	4471.5690	1.82577	4482.7209
½	1.82472	4461.1267	1.82526	4472.2656	1.82580	4483.4184
9/16	1.82476	4461.8225	1.82530	4472.9623	1.82584	4484.1159
⅝	1.82479	4462.5183	1.82533	4473.6590	1.82587	4484.8135
11/16	1.82482	4463.2142	1.82537	4474.3557	1.82591	4485.5111
¾	1.82486	4463.9102	1.82540	4475.0525	1.82594	4486.2088
13/16	1.82489	4464.6061	1.82543	4475.7494	1.82597	4486.9065
⅞	1.82493	4465.3022	1.82547	4476.4463	1.82601	4487.6043
15/16	1.82496	4465.9983	1.82550	4477.1433	1.82604	4488.3021

67′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.82607	4489.0000	1.82661	4500.1736	1.82715	4511.361
1/16	1.82611	4489.6979	1.82665	4500.8724	1.82719	4512.060
1/8	1.82614	4490.3959	1.82668	4501.5713	1.82722	4512.760
3/16	1.82618	4491.0940	1.82672	4502.2702	1.82725	4513.460
1/4	1.82621	4491.7921	1.82675	4502.9692	1.82729	4514.160
5/16	1.82624	4492.4903	1.82678	4503.6682	1.82732	4514.860
3/8	1.82628	4493.1885	1.82682	4504.3673	1.82736	4515.560
7/16	1.82631	4493.8867	1.82685	4505.0664	1.82739	4516.260
1/2	1.82634	4494.5851	1.82688	4505.7656	1.82742	4516.960
9/16	1.82638	4495.2834	1.82692	4506.4649	1.82746	4517.660
5/8	1.82641	4495.9819	1.82695	4507.1642	1.82749	4518.360
11/16	1.82645	4496.6804	1.82699	4507.8635	1.82752	4519.060
3/4	1.82648	4497.3789	1.82702	4508.5629	1.82756	4519.760
13/16	1.82651	4498.0775	1.82705	4509.2624	1.82759	4520.461
7/8	1.82655	4498.7762	1.82709	4509.9619	1.82763	4521.161
15/16	1.82658	4499.4749	1.82712	4510.6615	1.82766	4521.862

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.82769	4522.5625	1.82823	4533.7778	1.82877	4545.006
1/16	1.82773	4523.2630	1.82826	4534.4792	1.82880	4545.709
1/8	1.82776	4523.9637	1.82830	4535.1807	1.82883	4546.411
3/16	1.82779	4524.6643	1.82833	4535.8822	1.82887	4547.114
1/4	1.82783	4525.3650	1.82836	4536.5838	1.82890	4547.816
5/16	1.82786	4526.0658	1.82840	4537.2854	1.82894	4548.518
3/8	1.82789	4526.7666	1.82843	4537.9871	1.82897	4549.221
7/16	1.82793	4527.4675	1.82847	4538.6888	1.82900	4549.924
1/2	1.82796	4528.1684	1.82850	4539.3906	1.82904	4550.626
9/16	1.82799	4528.8694	1.82853	4540.0925	1.82907	4551.329
5/8	1.82803	4529.5704	1.82857	4540.7944	1.82910	4552.032
11/16	1.82806	4530.2715	1.82860	4541.4963	1.82914	4552.735
3/4	1.82810	4530.9727	1.82863	4542.1984	1.82917	4553.437
13/16	1.82813	4531.6739	1.82867	4542.9004	1.82920	4554.140
7/8	1.82816	4532.3751	1.82870	4543.6025	1.82924	4554.843
15/16	1.82820	4533.0764	1.82873	4544.3047	1.82927	4555.546

67′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.82930	4556.2500	1.82984	4567.5069	1.83037	4578.7778
1⁄16	1.82934	4556.9532	1.82987	4568.2110	1.83041	4579.4827
⅛	1.82937	4557.6564	1.82991	4568.9150	1.83044	4580.1876
3⁄16	1.82940	4558.3596	1.82994	4569.6192	1.83048	4580.8926
¼	1.82944	4559.0629	1.82997	4570.3234	1.83051	4581.5977
5⁄16	1.82947	4559.7663	1.83001	4571.0276	1.83054	4582.3028
⅜	1.82950	4560.4697	1.83004	4571.7319	1.83058	4583.0079
7⁄16	1.82954	4561.1732	1.83007	4572.4362	1.83061	4583.7131
½	1.82957	4561.8767	1.83011	4573.1406	1.83064	4584.4184
9⁄16	1.82961	4562.5803	1.83014	4573.8451	1.83068	4585.1237
⅝	1.82964	4563.2840	1.83017	4574.5496	1.83071	4585.8291
11⁄16	1.82967	4563.9877	1.83021	4575.2542	1.83074	4586.5345
¾	1.82971	4564.6914	1.83024	4575.9588	1.83078	4587.2400
13⁄16	1.82974	4565.3952	1.83027	4576.6634	1.83081	4587.9456
⅞	1.82977	4566.0991	1.83031	4577.3682	1.83084	4588.6512
15⁄16	1.82981	4566.8030	1.83034	4578.0729	1.83088	4589.3568

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.83091	4590.0625	1.83144	4601.3611	1.83198	4612.6736
1⁄16	1.83094	4590.7683	1.83148	4602.0677	1.83201	4613.3811
⅛	1.83098	4591.4741	1.83151	4602.7744	1.83204	4614.0887
3⁄16	1.83101	4592.1799	1.83154	4603.4811	1.83208	4614.7963
¼	1.83104	4592.8859	1.83158	4604.1879	1.83211	4615.5039
5⁄16	1.83108	4593.5918	1.83161	4604.8948	1.83214	4616.2116
⅜	1.83111	4594.2979	1.83164	4605.6017	1.83218	4616.9194
7⁄16	1.83114	4595.0039	1.83168	4606.3086	1.83221	4617.6272
½	1.83118	4595.7101	1.83171	4607.0156	1.83224	4618.3351
⁄16	1.83121	4596.4163	1.83174	4607.7227	1.83228	4619.0430
⅝	1.83124	4597.1225	1.83178	4608.4298	1.83231	4619.7510
1⁄16	1.83128	4597.8288	1.83181	4609.1370	1.83234	4620.4590
¾	1.83131	4598.5352	1.83184	4609.8442	1.83238	4621.1671
3⁄16	1.83134	4599.2416	1.83188	4610.5515	1.83241	4621.8752
⅞	1.83138	4599.9480	1.83191	4611.2588	1.83244	4622.5834
5⁄16	1.83141	4600.6545	1.83194	4611.9662	1.83248	4623.2917

68'

Fraction of an inch	0" Log.	0" Square.	1" Log.	1" Square.	2" Log.	2" Square.
0	1.83251	4624.0000	1.83304	4635.3403	1.83357	4646.6944
1/16	1.83254	4624.7084	1.83307	4636.0495	1.83361	4647.4045
1/8	1.83258	4625.4168	1.83311	4636.7588	1.83364	4648.1147
3/16	1.83261	4626.1252	1.83314	4637.4681	1.83367	4648.8249
1/4	1.83264	4626.8338	1.83317	4638.1775	1.83370	4649.5352
5/16	1.83268	4627.5423	1.83321	4638.8870	1.83374	4650.2455
3/8	1.83271	4628.2510	1.83324	4639.5965	1.83377	4650.9558
7/16	1.83274	4628.9597	1.83327	4640.3060	1.83380	4651.6663
1/2	1.83277	4629.6684	1.83331	4641.0156	1.83384	4652.3767
9/16	1.83281	4630.3772	1.83334	4641.7253	1.83387	4653.0873
5/8	1.83284	4631.0860	1.83337	4642.4350	1.83390	4653.7979
11/16	1.83287	4631.7949	1.83341	4643.1448	1.83394	4654.508
3/4	1.83291	4632.5039	1.83344	4643.8546	1.83397	4655.219
13/16	1.83294	4633.2129	1.83347	4644.5645	1.83400	4655.9299
7/8	1.83297	4633.9220	1.83351	4645.2744	1.83404	4656.6407
15/16	1.83301	4634.6311	1.83354	4645.9844	1.83407	4657.3514

Fraction of an inch	3" Log.	3" Square.	4" Log.	4" Square.	5" Log.	5" Square.
0	1.83410	4658.0625	1.83463	4669.4444	1.83516	4680.8403
1/16	1.83414	4658.7735	1.83467	4670.1563	1.83519	4681.5530
1/8	1.83417	4659.4845	1.83470	4670.8682	1.83523	4682.2657
3/16	1.83420	4660.1956	1.83473	4671.5801	1.83526	4682.9785
1/4	1.83424	4660.9067	1.83476	4672.2921	1.83529	4683.6914
5/16	1.83427	4661.6179	1.83480	4673.0042	1 83533	4684.4043
3/8	1.83430	4662.3291	1.83483	4673.7163	1.83536	4685.1173
7/16	1.83433	4663.0404	1.83486	4674.4284	1.83539	4685.8303
1/2	1.83437	4663.7517	1.83490	4675.1406	1.83543	4686.5434
9/16	1.83440	4664.4631	1.83493	4675.8529	1.83546	4687.2565
5/8	1.83443	4665.1746	1.83496	4676.5652	1.83549	4687.9697
11/16	1.83447	4665.8861	1.83500	4677.2776	1.83553	4688.6830
3/4	1.83450	4666.5977	1.83503	4677.9900	1.83556	4689.3963
13/16	1.83453	4667.3093	1.83506	4678.7025	1.83559	4690.1096
7/8	1.83457	4668.0209	1.83510	4679.4150	1.83562	4690.8230
15/16	1.83460	4668.7327	1.83513	4680.1276	1.83566	4691.536

68′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.83569	4692.2500	1.83622	4703.6736	1.83675	4715.1111
1/16	1.83572	4692.9636	1.83625	4704.3880	1.83678	4715.8264
1/8	1.83576	4693.6772	1.83628	4705.1025	1.83681	4716.5418
3/16	1.83579	4694.3909	1.83632	4705.8171	1.83684	4717.2572
1/4	1.83582	4695.1046	1.83635	4706.5317	1.83688	4717.9727
5/16	1.83586	4695.8184	1.83638	4707.2463	1.83691	4718.6882
3/8	1.83589	4696.5322	1.83642	4707.9610	1.83694	4719.4038
7/16	1.83592	4697.2461	1.83645	4708.6758	1.83698	4720.1194
1/2	1.83595	4697.9601	1.83648	4709.3906	1.83701	4720.8351
9/16	1.83599	4698.6741	1.83652	4710.1055	1.83704	4721.5508
5/8	1.83602	4699.3881	1.83655	4710.8204	1.83708	4722.2666
11/16	1.83605	4700.1022	1.83658	4711.5354	1.83711	4722.9824
3/4	1.83609	4700.8164	1.83661	4712.2504	1.83714	4723.6984
13/16	1.83612	4701.5306	1.83665	4712.9655	1.83717	4724.4143
7/8	1.83615	4702.2449	1.83668	4713.6807	1.83721	4725.1303
15/16	1.83619	4702.9592	1.83671	4714.3959	1.83724	4725.8464

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.83727	4726.5625	1.83780	4738.0278	1.83832	4749.5069
1/16	1.83731	4727.2787	1.83783	4738.7448	1.83836	4750.2249
1/8	1.83734	4727.9949	1.83786	4739.4619	1.83839	4750.9428
3/16	1.83737	4728.7112	1.83790	4740.1791	1.83842	4751.6608
1/4	1.83740	4729.4275	1.83793	4740.8963	1.83846	4752.3789
5/16	1.83744	4730.1439	1.83796	4741.6135	1.83849	4753.0970
3/8	1.83747	4730.8604	1.83800	4742.3308	1.83852	4753.8152
7/16	1.83750	4731.5769	1.83803	4743.0482	1.83855	4754.5334
1/2	1.83754	4732.2934	1.83806	4743.7656	1.83859	4755.2517
9/16	1.83757	4733.0100	1.83809	4744.4831	1.83862	4755.9701
5/8	1.83760	4733.7267	1.83813	4745.2006	1.83865	4756.6885
11/16	1.83763	4734.4434	1.83816	4745.9182	1.83869	4757.4069
3/4	1.83767	4735.1602	1.83819	4746.6359	1.83872	4758 1254
13/16	1.83770	4735.8770	1.83823	4747.3535	1.83875	4758.8440
7/8	1.83773	4736.5939	1.83826	4748.0713	1.83878	4759.5626
15/16	1.83777	4737.3108	1.83829	4748.7891	1.83882	4760.2813

69′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.83885	4761.0000	1.83937	4772.5069	1.83990	4784.0278
1/16	1.83888	4761.7188	1.83941	4773.2266	1.83993	4784.7483
1/8	1.83891	4762.4376	1.83944	4773.9463	1.83996	4785.4689
3/16	1.83895	4763.1565	1.83947	4774.6660	1.83999	4786.1895
1/4	1.83898	4763.8754	1.83950	4775.3859	1.84003	4786.9102
5/16	1.83901	4764.5944	1.83954	4776.1057	1.84006	4787.6309
3/8	1.83905	4765.3135	1.83957	4776.8256	1.84009	4788.3517
7/16	1.83908	4766.0326	1.83960	4777.5456	1.84013	4789.0725
1/2	1.83911	4766.7517	1.83964	4778.2656	1.84016	4789.7934
9/16	1.83914	4767.4709	1.83967	4778.9857	1.84019	4790.5144
5/8	1.83918	4768.1902	1.83970	4779.7058	1.84022	4791.2354
11/16	1.83921	4768.9095	1.83973	4780.4260	1.84026	4791.9564
3/4	1.83924	4769.6289	1.83977	4781.1463	1.84029	4792.6775
13/16	1.83928	4770.3483	1.83980	4781.8666	1.84032	4793.3987
7/8	1.83931	4771.0678	1.83983	4782.5869	1.84035	4794.1199
15/16	1.83934	4771.7874	1.83986	4783.3073	1.84039	4794.8412

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.84042	4795.5625	1.84094	4807.1111	1.84146	4818.6736
1/16	1.84045	4796.2839	1.84097	4807.8334	1.84150	4819.3967
1/8	1.84049	4797.0053	1.84101	4808.5557	1.84153	4820.1199
3/16	1.84052	4797.7268	1.84104	4809.2780	1.84156	4820.8431
1/4	1.84055	4798.4484	1.84107	4810.0004	1.84159	4821.5664
5/16	1.84058	4799.1699	1.84111	4810.7229	1.84163	4822.2897
3/8	1.84062	4799.8916	1.84114	4811.4454	1.84166	4823.0131
7/16	1.84065	4800.6133	1.84117	4812.1680	1.84169	4823.7366
1/2	1.84068	4801.3351	1.84120	4812.8906	1.84172	4824.4601
9/16	1.84071	4802.0569	1.84124	4813.6133	1.84176	4825.1836
5/8	1.84075	4802.7788	1.84127	4814.3360	1.84179	4825.9072
11/16	1.84078	4803.5007	1.84130	4815.0588	1.84182	4826.6309
3/4	1.84081	4804.2227	1.84133	4815.7817	1.84185	4827.3546
13/16	1.84084	4804.9447	1.84137	4816.5046	1.84189	4828.0784
7/8	1.84088	4805.6668	1.84140	4817.2275	1.84192	4828.8022
15/16	1.84091	4806.3889	1.84143	4817.9505	1.84195	4829.5261

69′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.84198	4830.2500	1.84251	4841.8403	1.84303	4853.4444
1/16	1.84202	4830.9740	1.84254	4842.5651	1.84306	4854.1702
1/8	1.84205	4831.6980	1.84257	4843.2900	1.84309	4854.8959
3/16	1.84208	4832.4221	1.84260	4844.0150	1.84312	4855.6218
1/4	1.84211	4833.1463	1.84264	4844.7400	1.84315	4856.3477
5/16	1.84215	4833.8705	1.84267	4845.4651	1.84319	4857.0736
3/8	1.84218	4834.5947	1.84270	4846.1902	1.84322	4857.7996
7/16	1.84221	4835.3190	1.84273	4846.9154	1.84325	4858.5256
1/2	1.84225	4836.0434	1.84277	4847.6406	1.84328	4859.2517
9/16	1.84228	4836.7678	1.84280	4848.3659	1.84332	4859.9779
5/8	1.84231	4837.4923	1.84283	4849.0913	1.84335	4860.7041
11/16	1.84234	4838.2168	1.84286	4849.8167	1.84338	4861.4304
3/4	1.84238	4838.9414	1.84290	4850.5421	1.84341	4862.1567
13/16	1.84241	4839.6660	1.84293	4851.2676	1.84345	4862.8831
7/8	1.84244	4840.3907	1.84296	4851.9932	1.84348	4863.6095
15/16	1.84247	4841.1155	1.84299	4852.7188	1.84351	4864.3360

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.84354	4865.0625	1.84406	4876.6944	1.84458	4888.3403
1/16	1.84358	4865.7891	1.84410	4877.4219	1.84461	4889.0686
1/8	1.84361	4866.5157	1.84413	4878.1494	1.84465	4889.7970
3/16	1.84364	4867.2424	1.84416	4878.8770	1.84468	4890.5254
1/4	1.84367	4867.9692	1.84419	4879.6046	1.84471	4891.2539
5/16	1.84371	4868.6960	1.84422	4880.3323	1.84474	4891.9824
3/8	1.84374	4869.4229	1.84426	4881.0600	1.84477	4892.7110
7/16	1.84377	4870.1498	1.84429	4881.7878	1.84481	4893.4397
1/2	1.84380	4870.8767	1.84432	4882.5156	1.84484	4894.1684
9/16	1.84384	4871.6038	1.84435	4883.2435	1.84487	4894.8972
5/8	1.84387	4872.3308	1.84439	4883.9715	1.84490	4895.6260
11/16	1.84390	4873.0580	1.84442	4884.6995	1.84494	4896.3548
3/4	1.84393	4873.7852	1.84445	4885.4275	1.84497	4897.0838
13/16	1.84397	4874.5124	1.84448	4886.1556	1.84500	4897.8127
7/8	1.84400	4875.2397	1.84452	4886.8838	1.84503	4898.5418
15/16	1.84403	4875.9670	1.84455	4887.6120	1.84507	4899.2709

70′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.84510	4900.0000	1.84561	4911.6736	1.84613	4923.3611
1/16	1.84513	4900.7292	1.84565	4912.4037	1.84616	4924.0920
1/8	1.84516	4901.4584	1.84568	4913.1338	1.84620	4924.8230
3/16	1.84519	4902.1877	1.84571	4913.8640	1.84623	4925.5541
1/4	1.84523	4902.9171	1.84574	4914.5942	1.84626	4926.2852
5/16	1.84526	4903.6465	1.84578	4915.3245	1.84629	4927.0163
3/8	1.84529	4904.3760	1.84581	4916.0548	1.84632	4927.7475
7/16	1.84532	4905.1055	1.84584	4916.7852	1.84636	4928.4788
1/2	1.84536	4905.8351	1.84587	4917.5156	1.84639	4929.2101
9/16	1.84539	4906.5647	1.84591	4918.2461	1.84642	4929.9414
5/8	1.84542	4907.2944	1.84594	4918.9767	1.84645	4930.6729
11/16	1.84545	4908.0241	1.84597	4919.7073	1.84649	4931.4043
3/4	1.84549	4908.7539	1.84600	4920.4379	1.84652	4932.1359
13/16	1.84552	4909.4838	1.84603	4921.1686	1.84655	4932.8674
7/8	1.84555	4910.2137	1.84607	4921.8994	1.84658	4933.5991
15/16	1.84558	4910.9436	1.84610	4922.6302	1.84661	4934.3308

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.84665	4935.0625	1.84716	4946.7778	1.84768	4958.5069
1/16	1.84668	4935.7943	1.84719	4947.5104	1.84771	4959.2405
1/8	1.84671	4936.5262	1.84723	4948.2432	1.84774	4959.9741
3/16	1.84674	4937.2581	1.84726	4948.9759	1.84777	4960.7077
1/4	1.84678	4937.9900	1.84729	4949.7088	1.84780	4961.4414
5/16	1.84681	4938.7220	1.84732	4950.4417	1.84784	4962.1752
3/8	1.84684	4939.4541	1.84735	4951.1746	1.84787	4962.9090
7/16	1.84687	4940.1862	1.84739	4951.9076	1.84790	4963.6428
1/2	1.84690	4940.9184	1.84742	4952.6406	1.84793	4964.3767
9/16	1.84694	4941.6506	1.84745	4953.3737	1.84796	4965.1107
5/8	1.84697	4942.3829	1.84748	4954.1069	1.84800	4965.8447
11/16	1.84700	4943.1153	1.84751	4954.8401	1.84803	4966.5788
3/4	1.84703	4943.8477	1.84755	4955.5734	1.84806	4967.3129
13/16	1.84706	4944.5801	1.84758	4956.3067	1.84809	4968.0471
7/8	1.84710	4945.3126	1.84761	4957.0400	1.84812	4968.7814
15/16	1.84713	4946.0452	1.84764	4957.7735	1.84816	4969.5157

70′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.84819	4970.2500	1.84870	4982.0069	1.84921	4993.7778
¹⁄₁₆	1.84822	4970.9844	1.84873	4982.7422	1.84925	4994.5139
⅛	1.84825	4971.7189	1.84877	4983.4775	1.84928	4995.2501
³⁄₁₆	1.84829	4972.4534	1.84880	4984.2129	1.84931	4995.9864
¼	1.84832	4973.1879	1.84883	4984.9484	1.84934	4996.7227
⁵⁄₁₆	1.84835	4973.9226	1.84886	4985.6838	1.84937	4997.4590
⅜	1.84838	4974.6572	1.84889	4986.4194	1.84941	4998.1954
⁷⁄₁₆	1.84841	4975.3920	1.84893	4987.1550	1.84944	4998.9319
½	1.84845	4976.1267	1.84896	4987.8906	1.84947	4999.6684
⁹⁄₁₆	1.84848	4976.8616	1.84899	4988.6263	1.84950	5000.4050
⅝	1.84851	4977.5965	1.84902	4989.3621	1.84953	5001.1416
¹¹⁄₁₆	1.84854	4978.3314	1.84905	4990.0979	1.84957	5001.8783
¾	1.84857	4979.0664	1.84909	4990.8338	1.84960	5002.6150
¹³⁄₁₆	1.84861	4979.8015	1.84912	4991.5697	1.84963	5003.3518
⅞	1.84864	4980.5366	1.84915	4992.3057	1.84966	5004.0887
¹⁵⁄₁₆	1.84867	4981.2717	1.84918	4993.0417	1.84969	5004.8255

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.84973	5005.5625	1.85024	5017.3611	1.85075	5029.1736
¹⁄₁₆	1.84976	5006.2995	1.85027	5018.0990	1.85078	5029.9124
⅛	1.84979	5007.0366	1.85030	5018.8369	1.85081	5030.6512
³⁄₁₆	1.84982	5007.7737	1.85033	5019.5749	1.85084	5031.3900
¼	1.84985	5008.5109	1.85037	5020.3129	1.85088	5032.1289
⁵⁄₁₆	1.84989	5009.2481	1.85040	5021.0510	1.85091	5032.8679
⅜	1.84992	5009.9854	1.85043	5021.7892	1.85094	5033.6069
⁷⁄₁₆	1.84995	5010.7227	1.85046	5022.5274	1.85097	5034.3459
½	1.84998	5011.4601	1.85049	5023.2656	1.85100	5035.0851
⁹⁄₁₆	1.85001	5012.1975	1.85052	5024.0039	1.85104	5035.8242
⅝	1.85005	5012.9350	1.85056	5024.7423	1.85107	5036.5635
¹¹⁄₁₆	1.85008	5013.6726	1.85059	5025.4807	1.85110	5037.3028
¾	1.85011	5014.4102	1.85062	5026.2192	1.85113	5038.0421
¹³⁄₁₆	1.85014	5015.1478	1.85065	5026.9577	1.85116	5038.7815
⅞	1.85017	5015.8855	1.85068	5027.6963	1.85119	5039.5209
¹⁵⁄₁₆	1.85021	5016.6233	1.85072	5028.4349	1.85123	5040.2604

71′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.85126	5041.0000	1.85177	5052.8403	1.85228	5064.6944
1/16	1.85129	5041.7396	1.85180	5053.5808	1.85231	5065.4358
1/8	1.85132	5042.4793	1.85183	5054.3213	1.85234	5066.1772
3/16	1.85135	5043.2190	1.85186	5055.0619	1.85237	5066.9186
1/4	1.85139	5043.9588	1.85190	5055.8025	1.85240	5067.6602
5/16	1.85142	5044.6986	1.85193	5056.5432	1.85244	5068.4017
3/8	1.85145	5045.4385	1.85196	5057.2840	1.85247	5069.1433
7/16	1.85148	5046.1784	1.85199	5058.0248	1.85250	5069.8850
1/2	1.85151	5046.9184	1.85202	5058.7656	1.85253	5070.6267
9/16	1.85154	5047.6584	1.85205	5059.5065	1.85256	5071.3685
5/8	1.85158	5048.3985	1.85209	5060.2475	1.85259	5072.1104
11/16	1.85161	5049.1387	1.85212	5060.9885	1.85263	5072.8522
3/4	1.85164	5049.8789	1.85215	5061.7296	1.85266	5073.5942
13/16	1.85167	5050.6192	1.85218	5062.4707	1.85269	5074.3362
7/8	1.85170	5051.3595	1.85221	5063.2119	1.85272	5075.0782
15/16	1.85174	5052.0999	1.85224	5063.9532	1.85275	5075.8203

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.85278	5076.5625	1.85329	5088.4444	1.85380	5100.3403
1/16	1.85282	5077.3047	1.85332	5089.1875	1.85383	5101.0842
1/8	1.85285	5078.0470	1.85336	5089.9307	1.85386	5101.8282
3/16	1.85288	5078.7893	1.85339	5090.6739	1.85389	5102.5723
1/4	1.85291	5079.5317	1.85342	5091.4171	1.85393	5103.3164
5/16	1.85294	5080.2741	1.85345	5092.1604	1.85396	5104.0606
3/8	1.85298	5081.0166	1.85348	5092.9038	1.85399	5104.8048
7/16	1.85301	5081.7591	1.85351	5093.6472	1.85402	5105.5491
1/2	1.85304	5082.5017	1.85355	5094.3906	1.85405	5106.2934
9/16	1.85307	5083.2444	1.85358	5095.1341	1.85408	5107.0378
5/8	1.85310	5083.9871	1.85361	5095.8777	1.85412	5107.7822
11/16	1.85313	5084.7298	1.85364	5096.6213	1.85415	5108.5267
3/4	1.85317	5085.4727	1.85367	5097.3650	1.85418	5109.2713
13/16	1.85320	5086.2155	1.85370	5098.1088	1.85421	5110.0159
7/8	1.85323	5086.9584	1.85374	5098.8525	1.85424	5110.7605
15/16	1.85326	5087.7014	1.85377	5099.5964	1.85427	5111.5052

71′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.85431	5112.2500	1.85481	5124.1736	1.85532	5136.1111
1/16	1.85434	5112.9948	1.85484	5124.9193	1.85535	5136.8577
1/8	1.85437	5113.7397	1.85488	5125.6650	1.85538	5137.6043
3/16	1.85440	5114.4846	1.85491	5126.4108	1.85541	5138.3509
1/4	1.85443	5115.2296	1.85494	5127.1567	1.85544	5139.0977
5/16	1.85446	5115.9746	1.85497	5127.9026	1.85547	5139.8444
3/8	1.85450	5116.7197	1.85500	5128.6485	1.85551	5140.5913
7/16	1.85453	5117.4649	1.85503	5129.3946	1.85554	5141.3381
1/2	1.85456	5118.2101	1.85506	5130.1406	1.85557	5142.0851
9/16	1.85459	5118.9553	1.85510	5130.8867	1.85560	5142.8321
5/8	1.85462	5119.7006	1.85513	5131.6329	1.85563	5143.5791
11/16	1.85465	5120.4460	1.85516	5132.3792	1.85566	5144.3262
3/4	1.85469	5121.1914	1.85519	5133.1254	1.85570	5145.0734
13/16	1.85472	5121.9369	1.85522	5133.8718	1.85573	5145.8206
7/8	1.85475	5122.6824	1.85525	5134.6182	1.85576	5146.5678
15/16	1.85478	5123.4280	1.85529	5135.3646	1.85579	5147.3151

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.85582	5148.0625	1.85633	5160.0278	1.85683	5172.0069
1/16	1.85585	5148.8099	1.85636	5160.7761	1.85686	5172.7561
1/8	1.85588	5149.5574	1.85639	5161.5244	1.85689	5173.5053
3/16	1.85592	5150.3049	1.85642	5162.2728	1.85692	5174.2546
1/4	1.85595	5151.0525	1.85645	5163.0213	1.85696	5175.0039
5/16	1.85598	5151.8002	1.85648	5163.7698	1.85699	5175.7533
3/8	1.85601	5152.5479	1.85651	5164.5183	1.85702	5176.5027
7/16	1.85604	5153.2956	1.85655	5165.2670	1.85705	5177.2522
1/2	1.85607	5154.0434	1.85658	5166.0156	1.85708	5178.0017
9/16	1.85611	5154.7913	1.85661	5166.7644	1.85711	5178.7513
5/8	1.85614	5155.5392	1.85664	5167.5131	1.85714	5179.5010
11/16	1.85617	5156.2871	1.85667	5168.2620	1.85718	5180.2507
3/4	1.85620	5157.0352	1.85670	5169.0109	1.85721	5181.0004
13/16	1.85623	5157.7832	1.85674	5169.7598	1.85724	5181.7502
7/8	1.85626	5158.5314	1.85677	5170.5088	1.85727	5182.5001
15/16	1.85629	5159.2795	1.85680	5171.2578	1.85730	5183.2500

72′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.85733	5184.0000	1.85783	5196.0069	1.85834	5208.0278
1/16	1.85736	5184.7500	1.85787	5196.7578	1.85837	5208.7795
⅛	1.85740	5185.5001	1.85790	5197.5088	1.85840	5209.5314
3/16	1.85743	5186.2502	1.85793	5198.2598	1.85843	5210.2832
¼	1.85746	5187.0004	1.85796	5199.0109	1.85846	5211.0352
5/16	1.85749	5187.7507	1.85799	5199.7620	1.85849	5211.7871
⅜	1.85752	5188.5010	1.85802	5200.5131	1.85852	5212.5392
7/16	1.85755	5189.2513	1.85805	5201.2644	1.85856	5213.2913
½	1.85758	5190.0017	1.85809	5202.0156	1.85859	5214.0434
9/16	1.85762	5190.7522	1.85812	5202.7670	1.85862	5214.7956
⅝	1.85765	5191.5027	1.85815	5203.5183	1.85865	5215.5479
11/16	1.85768	5192.2533	1.85818	5204.2698	1.85868	5216.3002
¾	1.85771	5193.0039	1.85821	5205.0213	1.85871	5217.0525
13/16	1.85774	5193.7546	1.85824	5205.7728	1.85874	5217.8049
⅞	1.85777	5194.5053	1.85827	5206.5244	1.85878	5218.5574
15/16	1.85780	5195.2561	1.85831	5207.2761	1.85881	5219.3099

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.85884	5220.0625	1.85934	5232.1111	1.85984	5244.1736
1/16	1.85887	5220.8151	1.85937	5232.8646	1.85987	5244.9280
⅛	1.85890	5221.5678	1.85940	5233.6182	1.85990	5245.6824
3/16	1.85893	5222.3206	1.85943	5234.3718	1.85993	5246.4369
¼	1.85896	5223.0734	1.85946	5235.1254	1.85996	5247.1914
5/16	1.85899	5223.8262	1.85949	5235.8792	1.85999	5247.9460
⅜	1.85903	5224.5791	1.85953	5236.6329	1.86003	5248.7006
7/16	1.85906	5225.3321	1.85956	5237.3867	1.86006	5249.4553
½	1.85909	5226.0851	1.85959	5238.1406	1.86009	5250.2101
9/16	1.85912	5226.8381	1.85962	5238.8946	1.86012	5250.9649
⅝	1.85915	5227.5913	1.85965	5239.6485	1.86015	5251.7197
11/16	1.85918	5228.3444	1.85968	5240.4026	1.86018	5252.4746
¾	1.85921	5229.0977	1.85971	5241.1567	1.86021	5253.2296
13/16	1.85924	5229.8509	1.85974	5241.9108	1.86024	5253.9846
⅞	1.85928	5230.6043	1.85978	5242.6650	1.86028	5254.7397
15/16	1.85931	5231.3577	1.85981	5243.4193	1.86031	5255.4948

72′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.86034	5256.2500	1.86084	5268.3403	1.86134	5280.4444
1/16	1.86037	5257.0052	1.86087	5269.0964	1.86137	5281.2014
⅛	1.86040	5257.7605	1.86090	5269.8525	1.86140	5281.9584
3/16	1.86043	5258.5159	1.86093	5270.6088	1.86143	5282.7155
¼	1.86046	5259.2713	1.86096	5271.3650	1.86146	5283.4727
5/16	1.86049	5260.0267	1.86099	5272.1213	1.86149	5284.2298
⅜	1.86053	5260.7822	1.86102	5272.8777	1.86152	5284.9871
7/16	1.86056	5261.5378	1.86106	5273.6341	1.86155	5285.7444
½	1.86059	5262.2934	1.86109	5274.3906	1.86158	5286.5017
9/16	1.86062	5263.0491	1.86112	5275.1472	1.86162	5287.2591
⅝	1.86065	5263.8048	1.86115	5275.9038	1.86165	5288.0166
11/16	1.86068	5264.5606	1.86118	5276.6604	1.86168	5288.7741
¾	1.86071	5265.3164	1.86121	5277.4171	1.86171	5289.5317
13/16	1.86074	5266.0723	1.86124	5278.1739	1.86174	5290.2893
⅞	1.86077	5266.8282	1.86127	5278.9307	1.86177	5291.0470
15/16	1.86081	5267.5842	1.86130	5279.6875	1.86180	5291.8047

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.86183	5292.5625	1.86233	5304.6944	1.86283	5316.8403
1/16	1.86186	5293.3203	1.86236	5305.4532	1.86286	5317.5999
⅛	1.86190	5294.0782	1.86239	5306.2119	1.86289	5318.3595
3/16	1.86193	5294.8362	1.86242	5306.9707	1.86292	5319.1192
¼	1.86196	5295.5942	1.86245	5307.7296	1.86295	5319.8789
5/16	1.86199	5296.3522	1.86249	5308.4885	1.86298	5320.6387
⅜	1.86202	5297.1104	1.86252	5309.2475	1.86301	5321.3985
7/16	1.86205	5297.8685	1.86255	5310.0065	1.86304	5322.1584
½	1.86208	5298.6267	1.86258	5310.7656	1.86307	5322.9184
9/16	1.86211	5299.3850	1.86261	5311.5248	1.86311	5323.6784
⅝	1.86214	5300.1433	1.86264	5312.2840	1.86314	5324.4385
11/16	1.86217	5300.9017	1.86267	5313.0432	1.86317	5325.1986
¾	1.86221	5301.6602	1.86270	5313.8025	1.86320	5325.9588
13/16	1.86224	5302.4186	1.86273	5314.5619	1.86323	5326.7190
⅞	1.86227	5303.1772	1.86276	5315.3213	1.86326	5327.4793
15/16	1.86230	5303.9358	1.86280	5316.0808	1.86329	5328.2396

73′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.86332	5329.0000	1.86382	5341.1736	1.86431	5353.3611
1/16	1.86335	5329.7604	1.86385	5341.9349	1.86434	5354.1233
1/8	1.86338	5330.5209	1.86388	5342.6963	1.86438	5354.8855
3/16	1.86342	5331.2815	1.86391	5343.4577	1.86441	5355.6478
1/4	1.86345	5332.0421	1.86394	5344.2192	1.86444	5356.4102
5/16	1.86348	5332.8028	1.86397	5344.9807	1.86447	5357.1726
3/8	1.86351	5333.5635	1.86400	5345.7423	1.86450	5357.9350
7/16	1.86354	5334.3242	1.86403	5346.5039	1.86453	5358.6975
1/2	1.86357	5335.0851	1.86407	5347.2656	1.86456	5359.4601
9/16	1.86360	5335.8459	1.86410	5348.0274	1.86459	5360.2227
5/8	1.86363	5336.6069	1.86413	5348.7892	1.86462	5360.9854
11/16	1.86366	5337.3679	1.86416	5349.5510	1.86465	5361.7481
3/4	1.86369	5338.1289	1.86419	5350.3129	1.86468	5362.5109
13/16	1.86373	5338.8900	1.86422	5351.0749	1.86471	5363.2737
7/8	1.86376	5339.6512	1.86425	5351.8369	1.86475	5364.0366
15/16	1.86379	5340.4124	1.86428	5352.5990	1.86478	5364.7995

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.86481	5365.5625	1.86530	5377.7778	1.86579	5390.0069
1/16	1.86484	5366.3255	1.86533	5378.5417	1.86583	5390.7717
1/8	1.86487	5367.0887	1.86536	5379.3057	1.86586	5391.5366
3/16	1.86490	5367.8518	1.86539	5380.0697	1.86589	5392.3015
1/4	1.86493	5368.6150	1.86542	5380.8338	1.86592	5393.0664
5/16	1.86496	5369.3783	1.86546	5381.5979	1.86595	5393.8314
3/8	1.86499	5370.1416	1.86549	5382.3621	1.86598	5394.5965
7/16	1.86502	5370.9050	1.86552	5383.1263	1.86601	5395.3616
1/2	1.86505	5371.6684	1.86555	5383.8906	1.86604	5396.1267
9/16	1.86509	5372.4319	1.86558	5384.6550	1.86607	5396.8920
5/8	1.86512	5373.1954	1.86561	5385.4194	1.86610	5397.6572
11/16	1.86515	5373.9590	1.86564	5386.1838	1.86613	5398.4226
3/4	1.86518	5374.7227	1.86567	5386.9484	1.86616	5399.1879
13/16	1.86521	5375.4864	1.86570	5387.7129	1.86620	5399.9534
7/8	1.86524	5376.2501	1.86573	5388.4775	1.86623	5400.7189
15/16	1.86527	5377.0139	1.86576	5389.2422	1.86626	5401.4844

73′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.86629	5402.2500	1.86678	5414.5069	1.86727	5426.7778
1/16	1.86632	5403.0157	1.86681	5415.2735	1.86730	5427.5452
1/8	1.86635	5403.7814	1.86684	5416.0400	1.86733	5428.3126
3/16	1.86638	5404.5471	1.86687	5416.8067	1.86736	5429.0801
1/4	1.86641	5405.3129	1.86690	5417.5734	1.86739	5429.8477
5/16	1.86644	5406.0788	1.86693	5418.3401	1.86742	5430.6153
3/8	1.86647	5406.8447	1.86696	5419.1069	1.86746	5431.3829
7/16	1.86650	5407.6107	1.86699	5419.8737	1.86749	5432.1506
1/2	1.86653	5408.3767	1.86703	5420.6406	1.86752	5432.9184
9/16	1.86656	5409.1428	1.86706	5421.4076	1.86755	5433.6862
5/8	1.86659	5409.9090	1.86709	5422.1746	1.86758	5434.4541
11/16	1.86663	5410.6752	1.86712	5422.9417	1.86761	5435.2220
3/4	1.86666	5411.4414	1.86715	5423.7088	1.86764	5435.9900
13/16	1.86669	5412.2077	1.86718	5424.4759	1.86767	5436.7581
7/8	1.86672	5412.9741	1.86721	5425.2432	1.86770	5437.5262
15/16	1.86675	5413.7405	1.86724	5426.0104	1.86773	5438.2943

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.86776	5439.0625	1.86825	5451.3611	1.86874	5463.6736
1/16	1.86779	5439.8308	1.86828	5452.1302	1.86877	5464.4436
1/8	1.86782	5440.5991	1.86831	5452.8994	1.86880	5465.2137
3/16	1.86785	5441.3674	1.86834	5453.6686	1.86883	5465.9838
1/4	1.86788	5442.1359	1.86838	5454.4379	1.86886	5466.7539
5/16	1.86792	5442.9043	1.86841	5455.2073	1.86890	5467.5241
3/8	1.86795	5443.6729	1.86844	5455.9767	1.86893	5468.2944
7/16	1.86798	5444.4414	1.86847	5456.7461	1.86896	5469.0647
1/2	1.86801	5445.2101	1.86850	5457.5156	1.86899	5469.8351
9/16	1.86804	5445.9788	1.86853	5458.2852	1.86902	5470.6055
5/8	1.86807	5446.7475	1.86856	5459.0548	1.86905	5471.3760
11/16	1.86810	5447.5163	1.86859	5459.8245	1.86908	5472.1465
3/4	1.86813	5448.2852	1.86862	5460.5942	1.86911	5472.9171
13/16	1.86816	5449.0541	1.86865	5461.3640	1.86914	5473.6877
7/8	1.86819	5449.8230	1.86868	5462.1338	1.86917	5474.4584
15/16	1.86822	5450.5920	1.86871	5462.9037	1.86920	5475.2292

74′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.86923	5476.0000	1.86972	5488.3403	1.87021	5500.6944
1/16	1.86926	5476.7709	1.86975	5489.1120	1.87024	5501.4670
1/8	1.86929	5477.5418	1.86978	5489.8838	1.87027	5502.2397
3/16	1.86932	5478.3127	1.86981	5490.6556	1.87030	5503.0124
1/4	1.86935	5479.0838	1.86984	5491.4275	1.87033	5503.7852
5/16	1.86938	5479.8548	1.86987	5492.1995	1.87036	5504.5580
3/8	1.86942	5480.6260	1.86990	5492.9715	1.87039	5505.3308
7/16	1.86945	5481.3972	1.86993	5493.7435	1.87042	5506.1038
1/2	1.86948	5482.1684	1.86996	5494.5156	1.87045	5506.8767
9/16	1.86951	5482.9397	1.87000	5495.2878	1.87048	5507.6498
5/8	1.86954	5483.7110	1.87003	5496.0600	1.87051	5508.4229
11/16	1.86957	5484.4824	1.87006	5496.8323	1.87054	5509.1960
3/4	1.86960	5485.2539	1.87009	5497.6046	1.87057	5509.9692
13/16	1.86963	5486.0254	1.87012	5498.3770	1.87061	5510.7424
7/8	1.86966	5486.7970	1.87015	5499.1494	1.87064	5511.5157
15/16	1.86969	5487.5686	1.87018	5499.9219	1.87067	5512.2891

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.87070	5513.0625	1.87118	5525.4444	1.87167	5537.8403
1/16	1.87073	5513.8360	1.87121	5526.2188	1.87170	5538.6155
1/8	1.87076	5514.6095	1.87124	5526.9932	1.87173	5539.3907
3/16	1.87079	5515.3831	1.87127	5527.7676	1.87176	5540.1660
1/4	1.87082	5516.1567	1.87131	5528.5421	1.87179	5540.9414
5/16	1.87085	5516.9304	1.87134	5529.3167	1.87182	5541.7168
3/8	1.87088	5517.7041	1.87137	5530.0913	1.87185	5542.4923
7/16	1.87091	5518.4779	1.87140	5530.8659	1.87188	5543.2678
1/2	1.87094	5519.2517	1.87143	5531.6406	1.87191	5544.0434
9/16	1.87097	5520.0256	1.87146	5532.4154	1.87194	5544.8190
5/8	1.87100	5520.7996	1.87149	5533.1902	1.87197	5545.5947
11/16	1.87103	5521.5736	1.87152	5533.9651	1.87200	5546.3705
3/4	1.87106	5522.3477	1.87155	5534.7400	1.87203	5547.1463
13/16	1.87109	5523.1218	1.87158	5535.5150	1.87207	5547.9221
7/8	1.87112	5523.8959	1.87161	5536.2900	1.87210	5548.6980
15/16	1.87115	5524.6702	1.87164	5537.0651	1.87213	5549.4740

74′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.87216	5550.2500	1.87264	5562.6736	1.87313	5575.1111
1/16	1.87219	5551.0261	1.87267	5563.4505	1.87316	5575.8889
1/8	1.87222	5551.8022	1.87270	5564.2275	1.87319	5576.6668
3/16	1.87225	5552.5784	1.87273	5565.0046	1.87322	5577.4447
1/4	1.87228	5553.3546	1.87276	5565.7817	1.87325	5578.2227
5/16	1.87231	5554.1309	1.87279	5566.5588	1.87328	5579.0007
3/8	1.87234	5554.9072	1.87282	5567.3360	1.87331	5579.7788
7/16	1.87237	5555.6836	1.87285	5568.1133	1.87334	5580.5569
1/2	1.87240	5556.4601	1.87288	5568.8906	1.87337	5581.3351
9/16	1.87243	5557.2366	1.87291	5569.6680	1.87340	5582.1133
5/8	1.87246	5558.0131	1.87295	5570.4454	1.87343	5582.8916
11/16	1.87249	5558.7897	1.87298	5571.2229	1.87346	5583.6699
3/4	1.87252	5559.5664	1.87301	5572.0004	1.87349	5584.4484
13/16	1.87255	5560.3431	1.87304	5572.7780	1.87352	5585.2268
7/8	1.87258	5561.1199	1.87307	5573.5557	1.87355	5586.0053
15/16	1.87261	5561.8967	1.87310	5574.3334	1.87358	5586.7839

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.87361	5587.5625	1.87410	5600.0278	1.87458	5612.5069
1/16	1.87364	5588.3412	1.87413	5600.8073	1.87461	5613.2874
1/8	1.87367	5589.1199	1.87416	5601.5869	1.87464	5614.0678
3/16	1.87370	5589.8987	1.87419	5602.3666	1.87467	5614.8483
1/4	1.87373	5590.6775	1.87422	5603.1463	1.87470	5615.6289
5/16	1.87376	5591.4564	1.87425	5603.9260	1.87473	5616.4095
3/8	1.87379	5592.2354	1.87428	5604.7058	1.87476	5617.1902
7/16	1.87382	5593.0144	1.87431	5605.4857	1.87479	5617.9709
1/2	1.87385	5593.7934	1.87434	5606.2656	1.87482	5618.7517
9/16	1.87388	5594.5725	1.87437	5607.0456	1.87485	5619.5326
5/8	1.87391	5595.3517	1.87440	5607.8256	1.87488	5620 3135
11/16	1.87394	5596.1309	1.87443	5608.6057	1.87491	5621.0944
3/4	1.87397	5596.9102	1.87446	5609.3859	1.87494	5621.8754
13/16	1.87400	5597.6895	1.87449	5610.1660	1.87497	5622.6565
7/8	1.87403	5598.4689	1.87452	5610.9463	1.87500	5623.4376
15/16	1.87406	5599.2483	1.87455	5611.7266	1.87503	5624.2188

75′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.87506	5625.0000	1.87554	5637.5069	1.87603	5650.0278
1/16	1.87509	5625.7813	1.87557	5638.2891	1.87606	5650.8108
1/8	1.87512	5626.5626	1.87560	5639.0713	1.87609	5651.5939
3/16	1.87515	5627.3440	1.87563	5639.8535	1.87612	5652.3770
1/4	1.87518	5628.1254	1.87566	5640.6359	1.87615	5653.1602
5/16	1.87521	5628.9069	1.87569	5641.4182	1.87618	5653.9434
3/8	1.87524	5629.6885	1.87572	5642.2006	1.87621	5654.7267
7/16	1.87527	5630.4701	1.87575	5642.9831	1.87624	5655.5100
1/2	1.87530	5631.2517	1.87578	5643.7656	1.87627	5656.2934
9/16	1.87533	5632.0334	1.87581	5644.5482	1.87630	5657.0769
5/8	1.87536	5632.8152	1.87584	5645.3308	1.87633	5657.8604
11/16	1.87539	5633.5970	1.87587	5646.1135	1.87636	5658.6439
3/4	1.87542	5634.3789	1.87590	5646.8963	1.87639	5659.4275
13/16	1.87545	5635.1608	1.87594	5647.6791	1.87642	5660.2112
7/8	1.87548	5635.9428	1.87597	5648.4619	1.87645	5660.9949
15/16	1.87551	5636.7249	1.87600	5649.2448	1.87648	5661.7787

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.87651	5662.5625	1.87699	5675.1111	1.87747	5687.6736
1/16	1.87654	5663.3464	1.87702	5675.8959	1.87750	5688.4592
1/8	1.87657	5664.1303	1.87705	5676.6807	1.87753	5689.2449
3/16	1.87660	5664.9143	1.87708	5677.4655	1.87756	5690.0306
1/4	1.87663	5665.6984	1.87711	5678.2504	1.87759	5690.8164
5/16	1.87666	5666.4824	1.87714	5679.0354	1.87762	5691.6022
3/8	1.87669	5667.2666	1.87717	5679.8204	1.87765	5692.3881
7/16	1.87672	5668.0508	1.87720	5680.6055	1.87768	5693.1741
1/2	1.87675	5668.8351	1.87723	5681.3906	1.87771	5693.9601
9/16	1.87678	5669.6194	1.87726	5682.1758	1.87774	5694.7461
5/8	1.87681	5670.4038	1.87729	5682.9610	1.87777	5695.5322
11/16	1.87684	5671.1882	1.87732	5683.7463	1.87780	5696.3184
3/4	1.87687	5671.9727	1.87735	5684.5317	1.87783	5697.1046
13/16	1.87690	5672.7572	1.87738	5685.3171	1.87786	5697.8909
7/8	1.87693	5673.5418	1.87741	5686.1025	1.87789	5698.6772
15/16	1.87696	5674.3264	1.87744	5686.8880	1.87792	5699.4636

75′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.87795	5700.2500	1.87843	5712.8403	1.87890	5725.4444
1/16	1.87798	5701.0365	1.87846	5713.6276	1.87893	5726.2327
1/8	1.87801	5701.8230	1.87849	5714.4150	1.87896	5727.0209
3/16	1.87804	5702.6096	1.87852	5715.2025	1.87899	5727.8093
1/4	1.87807	5703.3963	1.87855	5715.9900	1.87902	5728.5977
5/16	1.87810	5704.1830	1.87858	5716.7776	1.87905	5729.3861
3/8	1.87813	5704.9697	1.87861	5717.5652	1.87908	5730.1746
7/16	1.87816	5705.7565	1.87864	5718.3529	1.87911	5730.9631
1/2	1.87819	5706.5434	1.87867	5719.1406	1.87914	5731.7517
9/16	1.87822	5707.3303	1.87870	5719.9284	1.87917	5732.5404
5/8	1.87825	5708.1173	1.87873	5720.7163	1.87920	5733.3291
11/16	1.87828	5708.9043	1.87876	5721.5042	1.87923	5734.1179
3/4	1.87831	5709.6914	1.87879	5722.2921	1.87926	5734.9067
13/16	1.87834	5710.4785	1.87881	5723.0801	1.87929	5735.6956
7/8	1.87837	5711.2657	1.87884	5723.8682	1.87932	5736.4845
15/16	1.87840	5712.0530	1.87887	5724.6563	1.87935	5737.2735

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.87938	5738.0625	1.87986	5750.6944	1.88034	5763.3403
1/16	1.87941	5738.8516	1.87989	5751.4844	1.88037	5764.1311
1/8	1.87944	5739.6407	1.87992	5752.2744	1.88040	5764.9220
3/16	1.87947	5740.4299	1.87995	5753.0645	1.88043	5765.7129
1/4	1.87950	5741.2192	1.87998	5753.8546	1.88046	5766.5039
5/16	1.87953	5742.0085	1.88001	5754.6448	1.88049	5767.2949
3/8	1.87956	5742.7979	1.88004	5755.4350	1.88052	5768.0860
7/16	1.87959	5743.5873	1.88007	5756.2253	1.88055	5768.8772
1/2	1.87962	5744.3767	1.88010	5757.0156	1.88058	5769.6684
9/16	1.87965	5745.1663	1.88013	5757.8060	1.88061	5770.4597
5/8	1.87968	5745.9558	1.88016	5758.5965	1.88063	5771.2510
11/16	1.87971	5746.7455	1.88019	5759.3870	1.88066	5772.0423
3/4	1.87974	5747.5352	1.88022	5760.1775	1.88069	5772.8338
13/16	1.87977	5748.3249	1.88025	5760.9681	1.88072	5773.6252
7/8	1.87980	5749.1147	1.88028	5761.7588	1.88075	5774.4168
15/16	1.87983	5749.9045	1.88031	5762.5495	1.88078	5775.2084

76′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.88081	5776.0000	1.88129	5788.6736	1.88176	5801.3611
1/16	1.88084	5776.7917	1.88132	5789.4662	1.88179	5802.1545
1/8	1.88087	5777.5834	1.88135	5790.2588	1.88182	5802.9480
3/16	1.88090	5778.3752	1.88138	5791.0515	1.88185	5803.7416
1/4	1.88093	5779.1671	1.88141	5791.8442	1.88188	5804.5352
5/16	1.88096	5779.9590	1.88144	5792.6370	1.88191	5805.3288
3/8	1.88099	5780.7510	1.88147	5793.4298	1.88194	5806.1225
7/16	1.88102	5781.5430	1.88150	5794.2227	1.88197	5806.9163
1/2	1.88105	5782.3351	1.88153	5795.0156	1.88200	5807.7101
9/16	1.88108	5783.1272	1.88156	5795.8086	1.88203	5808.5039
5/8	1.88111	5783.9194	1.88159	5796.6017	1.88206	5809.2979
11/16	1.88114	5784.7116	1.88162	5797.3948	1.88209	5810.0918
3/4	1.88117	5785.5039	1.88165	5798.1879	1.88212	5810.8859
13/16	1.88120	5786.2963	1.88168	5798.9811	1.88215	5811.6799
7/8	1.88123	5787.0887	1.88171	5799.7744	1.88218	5812.4741
15/16	1.88126	5787.8811	1.88174	5800.5677	1.88221	5813.2683

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.88224	5814.0625	1.88271	5826.7778	1.88319	5839.5069
1/16	1.88227	5814.8568	1.88274	5827.5729	1.88322	5840.3030
1/8	1.88230	5815.6512	1.88277	5828.3682	1.88325	5841.0991
3/16	1.88233	5816.4456	1.88280	5829.1634	1.88328	5841.8952
1/4	1.88236	5817.2400	1.88283	5829.9588	1.88331	5842.6914
5/16	1.88239	5818.0345	1.88286	5830.7542	1.88334	5843.4877
3/8	1.88242	5818.8291	1.88289	5831.5496	1.88337	5844.2840
7/16	1.88245	5819.6237	1.88292	5832.3451	1.88340	5845.0803
1/2	1.88248	5820.4184	1.88295	5833.1406	1.88342	5845.8767
9/16	1.88251	5821.2131	1.88298	5833.9362	1.88345	5846.6732
5/8	1.88254	5822.0079	1.88301	5834.7319	1.88348	5847.4697
11/16	1.88257	5822.8028	1.88304	5835.5276	1.88351	5848.2663
3/4	1.88260	5823.5977	1.88307	5836.3234	1.88354	5849.0629
13/16	1.88263	5824.3926	1.88310	5837.1192	1.88357	5849.8596
7/8	1.88265	5825.1876	1.88313	5837.9150	1.88360	5850.6564
15/16	1.88268	5825.9827	1.88316	5838.7110	1.88363	5851.4532

76′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.88366	5852.2500	1.88413	5865.0069	1.88461	5877.7778
1/16	1.88369	5853.0469	1.88416	5865.8047	1.88464	5878.5764
1/8	1.88372	5853.8439	1.88419	5866.6025	1.88467	5879.3751
3/16	1.88375	5854.6409	1.88422	5867.4004	1.88470	5880.1739
1/4	1.88378	5855.4379	1.88425	5868.1984	1.88472	5880.9727
5/16	1.88381	5856.2351	1.88428	5868.9963	1.88475	5881.7715
3/8	1.88384	5857.0322	1.88431	5869.7944	1.88478	5882.5704
7/16	1.88387	5857.8295	1.88434	5870.5925	1.88481	5883.3694
1/2	1.88390	5858.6267	1.88437	5871.3906	1.88484	5884.1684
9/16	1.88393	5859.4241	1.88440	5872.1888	1.88487	5884.9675
5/8	1.88396	5860.2215	1.88443	5872.9871	1.88490	5885.7666
11/16	1.88399	5861.0189	1.88446	5873.7854	1.88493	5886.5658
3/4	1.88402	5861.8164	1.88449	5874.5838	1.88496	5887.3650
13/16	1.88405	5862.6140	1.88452	5875.3822	1.88499	5888.1643
7/8	1.88408	5863.4116	1.88455	5876.1807	1.88502	5888.9637
15/16	1.88410	5864.2092	1.88458	5876.9792	1.88505	5889.7630

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.88508	5890.5625	1.88555	5903.3611	1.88602	5916.1736
1/16	1.88511	5891.3620	1.88558	5904.1615	1.88605	5916.9749
1/8	1.88514	5892.1616	1.88561	5904.9619	1.88608	5917.7762
3/16	1.88517	5892.9612	1.88564	5905.7624	1.88611	5918.5775
1/4	1.88520	5893.7609	1.88567	5906.5629	1.88614	5919.3789
5/16	1.88523	5894.5606	1.88570	5907.3635	1.88617	5920.1804
3/8	1.88526	5895.3604	1.88573	5908.1642	1.88620	5920.9819
7/16	1.88528	5896.1602	1.88576	5908.9649	1.88623	5921.7834
1/2	1.88531	5896.9601	1.88579	5909.7656	1.88626	5922.5851
9/16	1.88534	5897.7600	1.88581	5910.5664	1.88629	5923.3867
5/8	1.88537	5898.5600	1.88584	5911.3673	1.88631	5924.1885
11/16	1.88540	5899.3601	1.88587	5912.1682	1.88634	5924.9903
3/4	1.88543	5900.1602	1.88590	5912.9692	1.88637	5925.7921
13/16	1.88546	5900.9603	1.88593	5913.7702	1.88640	5926.5940
7/8	1.88549	5901.7605	1.88596	5914.5713	1.88643	5927.3959
15/16	1.88552	5902.5608	1.88599	5915.3724	1.88646	5928.1979

77′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.88649	5929.0000	1.88696	5941.8403	1.88743	5954.6944
1⁄16	1.88652	5929.8021	1.88699	5942.6433	1.88746	5955.4983
⅛	1.88655	5930.6043	1.88702	5943.4463	1.88749	5956.3022
3⁄16	1.88658	5931.4065	1.88705	5944.2494	1.88752	5957.1061
¼	1.88661	5932.2088	1.88708	5945.0525	1.88755	5957.9102
5⁄16	1.88664	5933.0111	1.88711	5945.8557	1.88758	5958.7142
⅜	1.88667	5933.8135	1.88714	5946.6590	1.88761	5959.5183
7⁄16	1.88670	5934.6159	1.88717	5947.4623	1.88763	5960.3225
½	1.88673	5935.4184	1.88720	5948.2656	1.88766	5961.1267
9⁄16	1.88676	5936.2209	1.88722	5949.0690	1.88769	5961.9310
⅝	1.88678	5937.0235	1.88725	5949.8725	1.88772	5962.7354
11⁄16	1.88681	5937.8262	1.88728	5950.6760	1.88775	5963.5397
¾	1.88684	5938.6289	1.88731	5951.4796	1.88778	5964.3442
13⁄16	1.88687	5939.4317	1.88734	5952.2832	1.88781	5965.1487
⅞	1.88690	5940.2345	1.88737	5953.0869	1.88784	5965.9532
15⁄16	1.88693	5941.0374	1.88740	5953.8907	1.88787	5966.7578

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.88790	5967.5625	1.88837	5980.4444	1.88883	5993.3403
1⁄16	1.88793	5968.3672	1.88840	5981.2500	1.88886	5994.1467
⅛	1.88796	5969.1720	1.88843	5982.0557	1.88889	5994.9532
3⁄16	1.88799	5969.9768	1.88845	5982.8614	1.88892	5995.7598
¼	1.88802	5970.7817	1.88848	5983.6671	1.88895	5996.5664
5⁄16	1.88804	5971.5866	1.88851	5984.4729	1.88898	5997.3731
⅜	1.88807	5972.3916	1.88854	5985.2788	1.88901	5998.1798
7⁄16	1.88810	5973.1966	1.88857	5986.0847	1.88904	5998.9866
½	1.88813	5974.0017	1.88860	5986.8906	1.88907	5999.7934
9⁄16	1.88816	5974.8069	1.88863	5987.6966	1.88910	6000.6003
⅝	1.88819	5975.6121	1.88866	5988.5027	1.88913	6001.4072
11⁄16	1.88822	5976.4173	1.88869	5989.3088	1.88916	6002.2142
¾	1.88825	5977.2227	1.88872	5990.1150	1.88918	6003.0213
13⁄16	1.88828	5978.0280	1.88875	5990.9213	1.88921	6003.8284
⅞	1.88831	5978.8334	1.88878	5991.7275	1.88924	6004.6355
15⁄16	1.88834	5979.6389	1.88881	5992.5339	1.88927	6005.4427

77′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.88930	6006.2500	1.88977	6019.1736	1.89023	6032.1111
1/16	1.88933	6007.0573	1.88980	6019.9818	1.89026	6032.9202
1/8	1.88936	6007.8647	1.88983	6020.7900	1.89029	6033.7293
3/16	1.88939	6008.6721	1.88986	6021.5983	1.89032	6034.5384
1/4	1.88942	6009.4796	1.88989	6022.4067	1.89035	6035.3477
5/16	1.88945	6010.2871	1.88991	6023.2151	1.89038	6036.1569
3/8	1.88948	6011.0947	1.88994	6024.0235	1.89041	6036.9663
7/16	1.88951	6011.9024	1.88997	6024.8321	1.89044	6037.7756
1/2	1.88954	6012.7101	1.89000	6025.6406	1.89047	6038.5851
9/16	1.88956	6013.5178	1.89003	6026.4492	1.89050	6039.3946
5/8	1.88959	6014.3256	1.89006	6027.2579	1.89053	6040.2041
11/16	1.88962	6015.1335	1.89009	6028.0667	1.89055	6041.0137
3/4	1.88965	6015.9414	1.89012	6028.8754	1.89058	6041.8234
13/16	1.88968	6016.7494	1.89015	6029.6843	1.89061	6042.6331
7/8	1.88971	6017.5574	1.89018	6030.4932	1.89064	6043.4428
15/16	1.88974	6018.3655	1.89021	6031.3021	1.89067	6044.2526

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.89070	6045.0625	1.89117	6058.0278	1.89163	6071.0069
1/16	1.89073	6045.8724	1.89119	6058.8386	1.89166	6071.8186
1/8	1.89076	6046.6824	1.89122	6059.6494	1.89169	6072.6303
3/16	1.89079	6047.4924	1.89125	6060.4603	1.89172	6073.4421
1/4	1.89082	6048.3025	1.89128	6061.2713	1.89175	6074.2539
5/16	1.89085	6049.1127	1.89131	6062.0823	1.89178	6075.0658
3/8	1.89087	6049.9229	1.89134	6062.8933	1.89180	6075.8777
7/16	1.89090	6050.7331	1.89137	6063.7045	1.89183	6076.6897
1/2	1.89093	6051.5434	1.89140	6064.5156	1.89186	6077.5017
9/16	1.89096	6052.3538	1.89143	6065.3269	1.89189	6078.3138
5/8	1.89099	6053.1642	1.89146	6066.1381	1.89192	6079.1260
11/16	1.89102	6053.9746	1.89149	6066.9495	1.89195	6079.9382
3/4	1.89105	6054.7852	1.89151	6067.7609	1.89198	6080.7504
13/16	1.89108	6055.5957	1.89154	6068.5723	1.89201	6081.5627
7/8	1.89111	6056.4064	1.89157	6069.3838	1.89204	6082.3751
15/16	1.89114	6057.2170	1.89160	6070.1953	1.89207	6083.1875

78′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.89209	6084.0000	1.89256	6097.0069	1.89302	6110.0278
¹⁄₁₆	1.89212	6084.8125	1.89259	6097.8203	1.89305	6110.8420
⅛	1.89215	6085.6251	1.89262	6098.6338	1.89308	6111.6564
³⁄₁₆	1.89218	6086.4377	1.89265	6099.4473	1.89311	6112.4707
¼	1.89221	6087.2504	1.89267	6100.2609	1.89314	6113.2852
⁵⁄₁₆	1.89224	6088.0632	1.89270	6101.0745	1.89317	6114.0996
⅜	1.89227	6088.8760	1.89273	6101.8881	1.89320	6114.9142
⁷⁄₁₆	1.89230	6089.6888	1.89276	6102.7019	1.89322	6115.7288
½	1.89233	6090.5017	1.89279	6103.5156	1.89325	6116.5434
⁹⁄₁₆	1.89236	6091.3147	1.89282	6104.3295	1.89328	6117.3581
⅝	1.89238	6092.1277	1.89285	6105.1433	1.89331	6118.1729
¹¹⁄₁₆	1.89241	6092.9408	1.89288	6105.9573	1.89334	6118.9877
¾	1.89244	6093.7539	1.89291	6106.7713	1.89337	6119.8025
¹³⁄₁₆	1.89247	6094.5671	1.89293	6107.5853	1.89340	6120.6174
⅞	1.89250	6095.3803	1.89296	6108.3994	1.89343	6121.4324
¹⁵⁄₁₆	1.89253	6096.1936	1.89299	6109.2136	1.89346	6122.2474

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.89348	6123.0625	1.89395	6136.1111	1.89441	6149.1736
¹⁄₁₆	1.89351	6123.8776	1.89398	6136.9271	1.89444	6149.9905
⅛	1.89354	6124.6928	1.89400	6137.7432	1.89447	6150.8074
³⁄₁₆	1.89357	6125.5081	1.89403	6138.5593	1.89449	6151.6244
¼	1.89360	6126.3234	1.89406	6139.3754	1.89452	6152.4414
⁵⁄₁₆	1.89363	6127.1387	1.89409	6140.1917	1.89455	6153.2585
⅜	1.89366	6127.9541	1.89412	6141.0079	1.89458	6154.0756
⁷⁄₁₆	1.89369	6128.7696	1.89415	6141.8242	1.89461	6154.8928
½	1.89372	6129.5851	1.89418	6142.6406	1.89464	6155.7101
⁹⁄₁₆	1.89374	6130.4006	1.89421	6143.4571	1.89467	6156.5274
⅝	1.89377	6131.2163	1.89424	6144.2735	1.89470	6157.3447
¹¹⁄₁₆	1.89380	6132.0319	1.89426	6145.0901	1.89473	6158.1621
¾	1.89383	6132.8477	1.89429	6145.9067	1.89475	6158.9796
¹³⁄₁₆	1.89386	6133.6634	1.89432	6146.7233	1.89478	6159.7971
⅞	1.89389	6134.4793	1.89435	6147.5400	1.89481	6160.6147
¹⁵⁄₁₆	1.89392	6135.2952	1.89438	6148.3568	1.89484	6161.4323

78′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.89487	6162.2500	1.89533	6175.3403	1.89579	6188.4444
1/16	1.89490	6163.0677	1.89536	6176.1589	1.89582	6189.2639
1/8	1.89493	6163.8855	1.89539	6176.9775	1.89585	6190.0834
3/16	1.89496	6164.7034	1.89542	6177.7963	1.89588	6190.9030
1/4	1.89498	6165.5213	1.89545	6178.6150	1.89591	6191.7227
5/16	1.89501	6166.3392	1.89547	6179.4338	1.89593	6192.5423
3/8	1.89504	6167.1572	1.89550	6180.2527	1.89596	6193.3621
7/16	1.89507	6167.9753	1.89553	6181.0716	1.89599	6194.1819
1/2	1.89510	6168.7934	1.89556	6181.8906	1.89602	6195.0017
9/16	1.89513	6169.6116	1.89559	6182.7097	1.89605	6195.8216
5/8	1.89516	6170.4298	1.89562	6183.5288	1.89608	6196.6416
11/16	1.89519	6171.2481	1.89565	6184.3479	1.89611	6197.4616
3/4	1.89522	6172.0664	1.89568	6185.1671	1.89614	6198.2817
13/16	1.89524	6172.8848	1.89570	6185.9864	1.89616	6199.1018
7/8	1.89527	6173.7032	1.89573	6186.8057	1.89619	6199.9220
15/16	1.89530	6174.5217	1.89576	6187.6250	1.89622	6200.7422

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.89625	6201.5625	1.89671	6214.6944	1.89717	6227.8403
1/16	1.89628	6202.3828	1.89674	6215.5157	1.89720	6228.6624
1/8	1.89631	6203.2032	1.89677	6216.3369	1.89723	6229.4845
3/16	1.89634	6204.0237	1.89680	6217.1582	1.89725	6230.3067
1/4	1.89637	6204.8442	1.89682	6217.9796	1.89728	6231.1289
5/16	1.89639	6205.6647	1.89685	6218.8010	1.89731	6231.9512
3/8	1.89642	6206.4854	1.89688	6219.6225	1.89734	6232.7735
7/16	1.89645	6207.3060	1.89691	6220.4440	1.89737	6233.5959
1/2	1.89648	6208.1267	1.89694	6221.2656	1.89740	6234.4184
9/16	1.89651	6208.9475	1.89697	6222.0873	1.89743	6235.2409
5/8	1.89654	6209.7683	1.89700	6222.9090	1.89746	6236.0635
11/16	1.89657	6210.5892	1.89703	6223.7307	1.89748	6236.8861
3/4	1.89660	6211.4102	1.89705	6224.5525	1.89751	6237.7088
13/16	1.89662	6212.2311	1.89708	6225.3744	1.89754	6238.5315
7/8	1.89665	6213.0522	1.89711	6226.1963	1.89757	6239.3543
15/16	1.89668	6213.8733	1.89714	6227.0183	1.89760	6240.1771

79′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.89763	6241.0000	1.89808	6254.1736	1.89854	6267.3611
1/16	1.89766	6241.8229	1.89811	6254.9974	1.89857	6268.1858
1/8	1.89768	6242.6459	1.89814	6255.8213	1.89860	6269.0105
3/16	1.89771	6243.4690	1.89817	6256.6452	1.89863	6269.8353
1/4	1.89774	6244.2921	1.89820	6257.4692	1.89866	6270.6602
5/16	1.89777	6245.1153	1.89823	6258.2932	1.89869	6271.4851
3/8	1.89780	6245.9385	1.89826	6259.1173	1.89871	6272.3100
7/16	1.89783	6246.7617	1.89829	6259.9414	1.89874	6273.1350
1/2	1.89786	6247.5851	1.89831	6260.7656	1.89877	6273.9601
9/16	1.89788	6248.4084	1.89834	6261.5899	1.89880	6274.7852
5/8	1.89791	6249.2319	1.89837	6262.4142	1.89883	6275.6104
11/16	1.89794	6250.0554	1.89840	6263.2385	1.89886	6276.4356
3/4	1.89797	6250.8789	1.89843	6264.0629	1.89889	6277.2609
13/16	1.89800	6251.7025	1.89846	6264.8874	1.89891	6278.0862
7/8	1.89803	6252.5262	1.89849	6265.7119	1.89894	6278.9116
15/16	1.89806	6253.3499	1.89851	6266.5365	1.89897	6279.7370

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.89900	6280.5625	1.89946	6293.7778	1.89991	6307.0069
1/16	1.89903	6281.3880	1.89948	6294.6042	1.89994	6307.8342
1/8	1.89906	6282.2137	1.89951	6295.4307	1.89997	6308.6616
3/16	1.89908	6283.0393	1.89954	6296.2572	1.90000	6309.4890
1/4	1.89911	6283.8650	1.89957	6297.0838	1.90003	6310.3164
5/16	1.89914	6284.6908	1.89960	6297.9104	1.90005	6311.1439
3/8	1.89917	6285.5166	1.89963	6298.7371	1.90008	6311.9715
7/16	1.89920	6286.3425	1.89966	6299.5638	1.90011	6312.7991
1/2	1.89923	6287.1684	1.89968	6300.3906	1.90014	6313.6267
9/16	1.89926	6287.9944	1.89971	6301.2175	1.90017	6314.4545
5/8	1.89928	6288.8204	1.89974	6302.0444	1.90020	6315.2822
11/16	1.89931	6289.6465	1.89977	6302.8713	1.90022	6316.1101
3/4	1.89934	6290.4727	1.89980	6303.6984	1.90025	6316.9379
13/16	1.89937	6291.2989	1.89983	6304.5254	1.90028	6317.7659
7/8	1.89940	6292.1251	1.89985	6305.3525	1.90031	6318.5939
15/16	1.89943	6292.9514	1.89988	6306.1797	1.90034	6319.4219

79′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.90037	6320.2500	1.90082	6333.5069	1.90128	6346.7778
1/16	1.90040	6321.0782	1.90085	6334.3360	1.90131	6347.6077
1/8	1.90042	6321.9064	1.90088	6335.1650	1.90133	6348.4376
3/16	1.90045	6322.7346	1.90091	6335.9942	1.90136	6349.2676
1/4	1.90048	6323.5629	1.90094	6336.8234	1.90139	6350.0977
5/16	1.90051	6324.3913	1.90096	6337.6526	1.90142	6350.9278
3/8	1.90054	6325.2197	1.90099	6338.4819	1.90145	6351.7579
7/16	1.90057	6326.0482	1.90102	6339.3112	1.90148	6352.5881
1/2	1.90059	6326.8767	1.90105	6340.1406	1.90150	6353.4184
9/16	1.90062	6327.7053	1.90108	6340.9701	1.90153	6354.2487
5/8	1.90065	6328.5340	1.90111	6341.7996	1.90156	6355.0791
11/16	1.90068	6329.3627	1.90113	6342.6292	1.90159	6355.9095
3/4	1.90071	6330.1914	1.90116	6343.4588	1.90162	6356.7400
13/16	1.90074	6331.0202	1.90119	6344.2884	1.90165	6357.5706
7/8	1.90077	6331.8491	1.90122	6345.1182	1.90167	6358.4012
15/16	1.90079	6332.6780	1.90125	6345.9479	1.90170	6359.2318

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.90173	6360.0625	1.90218	6373.3611	1.90264	6386.6736
1/16	1.90176	6360.8933	1.90221	6374.1927	1.90267	6387.5061
1/8	1.90179	6361.7241	1.90224	6375.0244	1.90269	6388.3387
3/16	1.90182	6362.5549	1.90227	6375.8561	1.90272	6389.1713
1/4	1.90184	6363.3859	1.90230	6376.6879	1.90275	6390.0039
5/16	1.90187	6364.2168	1.90233	6377.5198	1.90278	6390.8366
3/8	1.90190	6365.0479	1.90235	6378.3517	1.90281	6391.6694
7/16	1.90193	6365.8789	1.90238	6379.1836	1.90284	6392.5022
1/2	1.90196	6366.7101	1.90241	6380.0156	1.90286	6393.3351
9/16	1.90199	6367.5413	1.90244	6380.8477	1.90289	6394.1680
5/8	1.90201	6368.3725	1.90247	6381.6798	1.90292	6395.0010
11/16	1.90204	6369.2038	1.90250	6382.5120	1.90295	6395.8340
3/4	1.90207	6370.0352	1.90252	6383.3442	1.90298	6396.6671
13/16	1.90210	6370.8666	1.90255	6384.1765	1.90301	6397.5002
7/8	1.90213	6371.6980	1.90258	6385.0088	1.90303	6398.3334
15/16	1.90216	6372.5295	1.90261	6385.8412	1.90306	6399.1667

80′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.90309	6400.0000	1.90354	6413.3403	1.90399	6426.6944
1/16	1.90312	6400.8334	1.90357	6414.1745	1.90402	6427.5295
1/8	1.90315	6401.6668	1.90360	6415.0088	1.90405	6428.3647
3/16	1.90317	6402.5002	1.90363	6415.8431	1.90408	6429.1999
1/4	1.90320	6403.3338	1.90366	6416.6775	1.90411	6430.0352
5/16	1.90323	6404.1673	1.90368	6417.5120	1.90413	6430.8705
3/8	1.90326	6405.0010	1.90371	6418.3465	1.90416	6431.7058
7/16	1.90329	6405.8347	1.90374	6419.1810	1.90419	6432.5413
1/2	1.90332	6406.6684	1.90377	6420.0156	1.90422	6433.3767
9/16	1.90334	6407.5022	1.90380	6420.8503	1.90425	6434.2123
5/8	1.90337	6408.3360	1.90382	6421.6850	1.90428	6435.0479
11/16	1.90340	6409.1699	1.90385	6422.5198	1.90430	6435.8835
3/4	1.90343	6410.0039	1.90388	6423.3546	1.90433	6436.7192
13/16	1.90346	6410.8379	1.90391	6424.1895	1.90436	6437.5549
7/8	1.90349	6411.6720	1.90394	6425.0244	1.90439	6438.3907
15/16	1.90351	6412.5061	1.90397	6425.8594	1.90442	6439.2266

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.90445	6440.0625	1.90490	6453.4444	1.90535	6466.8403
1/16	1.90447	6440.8985	1.90492	6454.2813	1.90537	6467.6780
1/8	1.90450	6441.7345	1.90495	6455.1182	1.90540	6468.5157
3/16	1.90453	6442.5706	1.90498	6455.9551	1.90543	6469.3535
1/4	1.90456	6443.4067	1.90501	6456.7921	1.90546	6470.1914
5/16	1.90459	6444.2429	1.90504	6457.6292	1.90549	6471.0293
3/8	1.90461	6445.0791	1.90506	6458.4663	1.90551	6471.8673
7/16	1.90464	6445.9154	1.90509	6459.3034	1.90554	6472.7053
1/2	1.90467	6446.7517	1.90512	6460.1406	1.90557	6473.5434
9/16	1.90470	6447.5881	1.90515	6460.9779	1.90560	6474.3815
5/8	1.90473	6448.4246	1.90518	6461.8152	1.90563	6475.2197
11/16	1.90475	6449.2611	1.90521	6462.6526	1.90566	6476.0580
3/4	1.90478	6450.0977	1.90523	6463.4900	1.90568	6476.8963
13/16	1.90481	6450.9343	1.90526	6464.3275	1.90571	6477.7346
7/8	1.90484	6451.7709	1.90529	6465.1650	1.90574	6478.5730
15/16	1.90487	6452.6077	1.90532	6466.0026	1.90577	6479.4115

80′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.90580	6480.2500	1.90625	6493.6736	1.90669	6507.1111
1/16	1.90582	6481.0886	1.90627	6494.5130	1.90672	6507.9514
1/8	1.90585	6481.9272	1.90630	6495.3525	1.90675	6508.7918
3/16	1.90588	6482.7659	1.90633	6496.1921	1.90678	6509.6322
1/4	1.90591	6483.6046	1.90636	6497.0317	1.90681	6510.4727
5/16	1.90594	6484.4434	1.90639	6497.8713	1.90683	6511.3132
3/8	1.90596	6485.2822	1.90641	6498.7110	1.90686	6512.1538
7/16	1.90599	6486.1211	1.90644	6499.5508	1.90689	6512.9944
1/2	1.90602	6486.9601	1.90647	6500.3906	1.90692	6513.8351
9/16	1.90605	6487.7991	1.90650	6501.2305	1.90695	6514.6758
5/8	1.90608	6488.6381	1.90653	6502.0704	1.90697	6515.5166
11/16	1.90610	6489.4772	1.90655	6502.9104	1.90700	6516.3574
3/4	1.90613	6490.3164	1.90658	6503.7504	1.90703	6517.1984
13/16	1.90616	6491.1556	1.90661	6504.5905	1.90706	6518.0393
7/8	1.90619	6491.9949	1.90664	6505.4307	1.90709	6518.8803
15/16	1.90622	6492.8342	1.90667	6506.2709	1.90711	6519.7214

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.90714	6520.5625	1.90759	6534.0278	1.90804	6547.5069
1/16	1.90717	6521.4037	1.90762	6534.8698	1.90807	6548.3499
1/8	1.90720	6522.2449	1.90765	6535.7119	1.90809	6549.1928
3/16	1.90723	6523.0862	1.90767	6536.5541	1.90812	6550.0358
1/4	1.90725	6523.9275	1.90770	6537.3963	1.90815	6550.8789
5/16	1.90728	6524.7689	1.90773	6538.2385	1.90818	6551.7220
3/8	1.90731	6525.6104	1.90776	6539.0808	1.90821	6552.5652
7/16	1.90734	6526.4519	1.90779	6539.9232	1.90823	6553.4084
1/2	1.90737	6527.2934	1.90781	6540.7656	1.90826	6554.2517
9/16	1.90739	6528.1350	1.90784	6541.6081	1.90829	6555.0951
5/8	1.90742	6528.9767	1.90787	6542.4506	1.90832	6555.9385
11/16	1.90745	6529.8184	1.90790	6543.2932	1.90835	6556.7819
3/4	1.90748	6530.6602	1.90793	6544.1359	1.90837	6557.6254
13/16	1.90751	6531.5020	1.90795	6544.9785	1.90840	6558.4690
7/8	1.90753	6532.3439	1.90798	6545.8213	1.90843	6559.3126
15/16	1.90756	6533.1858	1.90801	6546.6641	1.90846	6560.1563

81′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.90849	6561.0000	1.90893	6574.5069	1.90938	6588.0278
1/16	1.90851	6561.8438	1.90896	6575.3516	1.90941	6588.8733
1/8	1.90854	6562.6876	1.90899	6576.1963	1.90943	6589.7189
3/16	1.90857	6563.5315	1.90902	6577.0410	1.90946	6590.5645
1/4	1.90860	6564.3754	1.90904	6577.8859	1.90949	6591.4102
5/16	1.90862	6565.2194	1.90907	6578.7307	1.90952	6592.2559
3/8	1.90865	6566.0635	1.90910	6579.5756	1.90954	6593.1017
7/16	1.90868	6566.9076	1.90913	6580.4206	1.90957	6593.9475
1/2	1.90871	6567.7517	1.90915	6581.2656	1.90960	6594.7934
9/16	1.90874	6568.5959	1.90918	6582.1107	1.90963	6595.6394
5/8	1.90876	6569.4402	1.90921	6582.9558	1.90966	6596.4854
11/16	1.90879	6570.2845	1.90924	6583.8010	1.90968	6597.3314
3/4	1.90882	6571.1289	1.90927	6584.6463	1.90971	6598.1775
13/16	1.90885	6571.9733	1.90929	6585.4916	1.90974	6599.0237
7/8	1.90888	6572.8178	1.90932	6586.3369	1.90977	6599.8699
15/16	1.90890	6573.6624	1.90935	6587.1823	1.90980	6600.7162

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.90982	6601.5625	1.91027	6615.1111	1.91071	6628.6736
1/16	1.90985	6602.4089	1.91030	6615.9584	1.91074	6629.5217
1/8	1.90988	6603.2553	1.91032	6616.8057	1.91077	6630.3699
3/16	1.90991	6604.1018	1.91035	6617.6530	1.91080	6631.2181
1/4	1.90993	6604.9484	1.91038	6618.5004	1.91082	6632.0664
5/16	1.90996	6605.7949	1.91041	6619.3479	1.91085	6632.9147
3/8	1.90999	6606.6416	1.91044	6620.1954	1.91088	6633.7631
7/16	1.91002	6607.4883	1.91046	6621.0430	1.91091	6634.6116
1/2	1.91005	6608.3351	1.91049	6621.8906	1.91094	6635.4601
9/16	1.91007	6609.1819	1.91052	6622.7383	1.91096	6636.3086
5/8	1.91010	6610.0288	1.91055	6623.5860	1.91099	6637.1572
11/16	1.91013	6610.8757	1.91057	6624.4338	1.91102	6638.0059
3/4	1.91016	6611.7227	1.91060	6625.2817	1.91105	6638.8546
13/16	1.91019	6612.5697	1.91063	6626.1296	1.91107	6639.7034
7/8	1.91021	6613.4168	1.91066	6626.9775	1.91110	6640.5522
15/16	1.91024	6614.2639	1.91069	6627.8255	1.91113	6641.4011

81′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.91116	6642.2500	1.91160	6655.8403	1.91204	6669.4444
1/16	1.91119	6643.0990	1.91163	6656.6901	1.91207	6670.2952
1/8	1.91121	6643.9480	1.91166	6657.5400	1.91210	6671.1459
3/16	1.91124	6644.7971	1.91168	6658.3900	1.91213	6671.9968
1/4	1.91127	6645.6463	1.91171	6659.2400	1.91216	6672.8477
5/16	1.91130	6646.4955	1.91174	6660.0901	1.91218	6673.6986
3/8	1.91132	6647.3447	1.91177	6660.9402	1.91221	6674.5496
7/16	1.91135	6648.1940	1.91180	6661.7904	1.91224	6675.4006
1/2	1.91138	6649.0434	1.91182	6662.6406	1.91227	6676.2517
9/16	1.91141	6649.8928	1.91185	6663.4909	1.91229	6677.1029
5/8	1.91144	6650.7423	1.91188	6664.3413	1.91232	6677.9541
11/16	1.91146	6651.5918	1.91191	6665.1917	1.91235	6678.8054
3/4	1.91149	6652.4414	1.91193	6666.0421	1.91238	6679.6567
13/16	1.91152	6653.2910	1.91196	6666.8926	1.91240	6680.5081
7/8	1.91155	6654.1407	1.91199	6667.7432	1.91243	6681.3595
15/16	1.91157	6654.9905	1.91202	6668.5938	1.91246	6682.2110

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.91249	6683.0625	1.91293	6696.6944	1.91337	6710.3403
1/16	1.91252	6683.9141	1.91296	6697.5469	1.91340	6711.1936
1/8	1.91254	6684.7657	1.91299	6698.3994	1.91343	6712.0470
3/16	1.91257	6685.6174	1.91301	6699.2520	1.91346	6712.9004
1/4	1.91260	6686.4692	1.91304	6700.1046	1.91348	6713.7539
5/16	1.91263	6687.3210	1.91307	6700.9573	1.91351	6714.6074
3/8	1.91265	6688.1729	1.91310	6701.8100	1.91354	6715.4610
7/16	1.91268	6689.0248	1.91312	6702.6628	1.91357	6716.3147
1/2	1.91271	6689.8767	1.91315	6703.5156	1.91359	6717.1684
9/16	1.91274	6690.7288	1.91318	6704.3685	1.91362	6718.0222
5/8	1.91276	6691.5808	1.91321	6705.2215	1.91365	6718.8760
11/16	1.91279	6692.4330	1.91323	6706.0745	1.91368	6719.7298
3/4	1.91282	6693.2852	1.91326	6706.9275	1.91370	6720.5838
13/16	1.91285	6694.1374	1.91329	6707.7806	1.91373	6721.4377
7/8	1.91287	6694.9897	1.91332	6708.6338	1.91376	6722.2918
15/16	1.91290	6695.8420	1.91334	6709.4870	1.91379	6723.1459

82′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.91381	6724.0000	1.91425	6737.6736	1.91470	6751.3611
1/16	1.91384	6724.8542	1.91428	6738.5287	1.91472	6752.2170
1/8	1.91387	6725.7084	1.91431	6739.3838	1.91475	6753.0730
3/16	1.91390	6726.5627	1.91434	6740.2390	1.91478	6753.9291
1/4	1.91392	6727.4171	1.91437	6741.0942	1.91481	6754.7852
5/16	1.91395	6728.2715	1.91439	6741.9495	1.91483	6755.6413
3/8	1.91398	6729.1260	1.91442	6742.8048	1.91486	6756.4975
7/16	1.91401	6729.9805	1.91445	6743.6602	1.91489	6757.3538
1/2	1.91403	6730.8351	1.91448	6744.5156	1.91492	6758.2101
9/16	1.91406	6731.6897	1.91450	6745.3711	1.91494	6759.0664
5/8	1.91409	6732.5444	1.91453	6746.2267	1.91497	6759.9229
11/16	1.91412	6733.3991	1.91456	6747.0823	1.91500	6760.7793
3/4	1.91414	6734.2539	1.91459	6747.9379	1.91503	6761.6359
13/16	1.91417	6735.1088	1.91461	6748.7936	1.91505	6762.4924
7/8	1.91420	6735.9637	1.91464	6749.6494	1.91508	6763.3491
15/16	1.91423	6736.8186	1.91467	6750.5052	1.91511	6764.2058

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.91514	6765.0625	1.91558	6778.7778	1.91602	6792.5069
1/16	1.91516	6765.9193	1.91560	6779.6354	1.91604	6793.3655
1/8	1.91519	6766.7762	1.91563	6780.4932	1.91607	6794.2241
3/16	1.91522	6767.6331	1.91566	6781.3509	1.91610	6795.0827
1/4	1.91525	6768.4900	1.91569	6782.2088	1.91612	6795.9414
5/16	1.91527	6769.3470	1.91571	6783.0667	1.91615	6796.8002
3/8	1.91530	6770.2041	1.91574	6783.9246	1.91618	6797.6590
7/16	1.91533	6771.0612	1.91577	6784.7826	1.91621	6798.5178
1/2	1.91536	6771.9184	1.91580	6785.6406	1.91623	6799.3767
9/16	1.91538	6772.7756	1.91582	6786.4987	1.91626	6800.2357
5/8	1.91541	6773.6329	1.91585	6787.3569	1.91629	6801.0947
11/16	1.91544	6774.4903	1.91588	6788.2151	1.91632	6801.9538
3/4	1.91547	6775.3477	1.91591	6789.0734	1.91634	6802.8129
13/16	1.91549	6776.2051	1.91593	6789.9317	1.91637	6803.6721
7/8	1.91552	6777.0626	1.91596	6790.7900	1.91640	6804.5314
15/16	1.91555	6777.9202	1.91599	6791.6485	1.91643	6805.3907

82′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.91645	6806.2500	1.91689	6820.0069	1.91733	6833.7778
1/16	1.91648	6807.1094	1.91692	6820.8672	1.91736	6834.6389
1/8	1.91651	6807.9689	1.91695	6821.7275	1.91739	6835.5001
3/16	1.91654	6808.8284	1.91697	6822.5879	1.91741	6836.3614
1/4	1.91656	6809.6879	1.91700	6823.4484	1.91744	6837.2227
5/16	1.91659	6810.5476	1.91703	6824.3088	1.91747	6838.0840
3/8	1.91662	6811.4072	1.91706	6825.1694	1.91749	6838.9454
7/16	1.91665	6812.2670	1.91708	6826.0300	1.91752	6839.8069
1/2	1.91667	6813.1267	1.91711	6826.8906	1.91755	6840.6684
9/16	1.91670	6813.9866	1.91714	6827.7513	1.91758	6841.5300
5/8	1.91673	6814.8465	1.91717	6828.6121	1.91760	6842.3916
11/16	1.91676	6815.7064	1.91719	6829.4729	1.91763	6843.2533
3/4	1.91678	6816.5664	1.91722	6830.3338	1.91766	6844.1150
13/16	1.91681	6817.4265	1.91725	6831.1947	1.91769	6844.9768
7/8	1.91684	6818.2866	1.91728	6832.0557	1.91771	6845.8387
15/16	1.91687	6819.1467	1.91730	6832.9167	1.91774	6846.7005

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.91777	6847.5625	1.91821	6861.3611	1.91864	6875.1736
1/16	1.91780	6848.4245	1.91823	6862.2240	1.91867	6876.0374
1/8	1.91782	6849.2866	1.91826	6863.0869	1.91870	6876.9012
3/16	1.91785	6850.1487	1.91829	6863.9499	1.91872	6877.7650
1/4	1.91788	6851.0109	1.91831	6864.8129	1.91875	6878.6289
5/16	1.91790	6851.8731	1.91834	6865.6760	1.91878	6879.4929
3/8	1.91793	6852.7354	1.91837	6866.5392	1.91881	6880.3569
7/16	1.91796	6853.5977	1.91840	6867.4024	1.91883	6881.2209
1/2	1.91799	6854.4601	1.91842	6868.2656	1.91886	6882.0851
9/16	1.91801	6855.3225	1.91845	6869.1289	1.91889	6882.9492
5/8	1.91804	6856.1850	1.91848	6869.9923	1.91891	6883.8135
11/16	1.91807	6857.0476	1.91851	6870.8557	1.91894	6884.6778
3/4	1.91810	6857.9102	1.91853	6871.7192	1.91897	6885.5421
13/16	1.91812	6858.7728	1.91856	6872.5827	1.91900	6886.4065
7/8	1.91815	6859.6355	1.91859	6873.4463	1.91902	6887.2709
15/16	1.91818	6860.4983	1.91861	6874.3099	1.91905	6888.1354

83′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.91908	6889.0000	1.91951	6902.8403	1.91995	6916.6944
1/16	1.91911	6889.8646	1.91954	6903.7058	1.91998	6917.5608
1/8	1.91913	6890.7293	1.91957	6904.5713	1.92000	6918.4272
3/16	1.91916	6891.5940	1.91960	6905.4369	1.92003	6919.2936
1/4	1.91919	6892.4588	1.91962	6906.3025	1.92006	6920.1602
5/16	1.91921	6893.3236	1.91965	6907.1682	1.92009	6921.0267
3/8	1.91924	6894.1885	1.91968	6908.0340	1.92011	6921.8933
7/16	1.91927	6895.0534	1.91970	6908.8998	1.92014	6922.7600
1/2	1.91930	6895.9184	1.91973	6909.7656	1.92017	6923.6267
9/16	1.91932	6896.7834	1.91976	6910.6315	1.92019	6924.4935
5/8	1.91935	6897.6485	1.91979	6911.4975	1.92022	6925.3604
11/16	1.91938	6898.5137	1.91981	6912.3635	1.92025	6926.2272
3/4	1.91941	6899.3789	1.91984	6913.2296	1.92028	6927.0942
13/16	1.91943	6900.2442	1.91987	6914.0957	1.92030	6927.9612
7/8	1.91946	6901.1095	1.91989	6914.9619	1.92033	6928.8282
15/16	1.91949	6901.9749	1.91992	6915.8282	1.92036	6929.6953

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.92038	6930.5625	1.92082	6944.4444	1.92125	6958.3403
1/16	1.92041	6931.4297	1.92085	6945.3125	1.92128	6959.2092
1/8	1.92044	6932.2970	1.92087	6946.1807	1.92131	6960.0782
3/16	1.92047	6933.1643	1.92090	6947.0489	1.92133	6960.9473
1/4	1.92049	6934.0317	1.92093	6947.9171	1.92136	6961.8164
5/16	1.92052	6934.8991	1.92095	6948.7854	1.92139	6962.6856
3/8	1.92055	6935.7666	1.92098	6949.6538	1.92142	6963.5548
7/16	1.92057	6936.6341	1.92101	6950.5222	1.92144	6964.4241
1/2	1.92060	6937.5017	1.92104	6951.3906	1.92147	6965.2934
9/16	1.92063	6938.3694	1.92106	6952.2591	1.92150	6966.1628
5/8	1.92066	6939.2371	1.92109	6953.1277	1.92152	6967.0322
11/16	1.92068	6940.1048	1.92112	6953.9963	1.92155	6967.9017
3/4	1.92071	6940.9727	1.92114	6954.8650	1.92158	6968.7713
13/16	1.92074	6941.8405	1.92117	6955.7338	1.92161	6969.6409
7/8	1.92076	6942.7084	1.92120	6956.6025	1.92163	6970.5105
15/16	1.92079	6943.5764	1.92123	6957.4714	1.92166	6971.3802

83′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.92169	6972.2500	1.92212	6986.1736	1.92255	7000.1111
1/16	1.92171	6973.1198	1.92215	6987.0443	1.92258	7000.9827
1/8	1.92174	6973.9897	1.92217	6987.9150	1.92261	7001.8543
3/16	1.92177	6974.8596	1.92220	6988.7858	1.92263	7002.7259
1/4	1.92179	6975.7296	1.92223	6989.6567	1.92266	7003.5977
5/16	1.92182	6976.5996	1.92225	6990.5276	1.92269	7004.4694
3/8	1.92185	6977.4697	1.92228	6991.3985	1.92271	7005.3413
7/16	1.92188	6978.3399	1.92231	6992.2696	1.92274	7006.2131
1/2	1.92190	6979.2101	1.92234	6993.1406	1.92277	7007.0851
9/16	1.92193	6980.0803	1.92236	6994.0117	1.92280	7007.9571
5/8	1.92196	6980.9506	1.92239	6994.8829	1.92282	7008.8291
11/16	1.92198	6981.8210	1.92242	6995.7542	1.92285	7009.7012
3/4	1.92201	6982.6914	1.92244	6996.6254	1.92288	7010.5734
13/16	1.92204	6983.5619	1.92247	6997.4968	1.92290	7011.4456
7/8	1.92207	6984.4324	1.92250	6998.3682	1.92293	7012.3178
15/16	1.92209	6985.3030	1.92253	6999.2396	1.92296	7013.1901

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.92298	7014.0625	1.92342	7028.0278	1.92385	7042.0069
1/16	1.92301	7014.9349	1.92344	7028.9011	1.92388	7042.8811
1/8	1.92304	7015.8074	1.92347	7029.7744	1.92390	7043.7553
3/16	1.92307	7016.6799	1.92350	7030.6478	1.92393	7044.6296
1/4	1.92309	7017.5525	1.92352	7031.5213	1.92396	7045.5039
5/16	1.92312	7018.4252	1.92355	7032.3948	1.92398	7046.3783
3/8	1.92315	7019.2979	1.92358	7033.2683	1.92401	7047.2527
7/16	1.92317	7020.1706	1.92361	7034.1420	1.92404	7048.1272
1/2	1.92320	7021.0434	1.92363	7035.0156	1.92406	7049.0017
9/16	1.92323	7021.9163	1.92366	7035.8894	1.92409	7049.8763
5/8	1.92325	7022.7892	1.92369	7036.7631	1.92412	7050.7510
11/16	1.92328	7023.6621	1.92371	7037.6370	1.92414	7051.6257
3/4	1.92331	7024.5352	1.92374	7038.5109	1.92417	7052.5004
13/16	1.92334	7025.4082	1.92377	7039.3848	1.92420	7053.3752
7/8	1.92336	7026.2814	1.92379	7040.2588	1.92423	7054.2501
15/16	1.92339	7027.1545	1.92382	7041.1328	1.92425	7055.1250

84′

Fraction of an inch	0″ Log.	0″ Square.	1″ Log.	1″ Square.	2″ Log.	2″ Square.
0	1.92428	7056.0000	1.92471	7070.0069	1.92514	7084.0278
1/16	1.92431	7056.8750	1.92474	7070.8828	1.92517	7084.9045
1/8	1.92433	7057.7501	1.92476	7071.7588	1.92519	7085.7814
3/16	1.92436	7058.6252	1.92479	7072.6348	1.92522	7086.6582
1/4	1.92439	7059.5004	1.92482	7073.5109	1.92525	7087.5352
5/16	1.92441	7060.3757	1.92484	7074.3870	1.92527	7088.4121
3/8	1.92444	7061.2510	1.92487	7075.2631	1.92530	7089.2892
7/16	1.92447	7062.1263	1.92490	7076.1394	1.92533	7090.1663
1/2	1.92449	7063.0017	1.92493	7077.0156	1.92536	7091.0434
9/16	1.92452	7063.8772	1.92495	7077.8920	1.92538	7091.9206
5/8	1.92455	7064.7527	1.92498	7078.7683	1.92541	7092.7979
11/16	1.92458	7065.6283	1.92501	7079.6448	1.92544	7093.6752
3/4	1.92460	7066.5039	1.92503	7080.5213	1.92546	7094.5525
13/16	1.92463	7067.3796	1.92506	7081.3978	1.92549	7095.4299
7/8	1.92466	7068.2553	1.92509	7082.2744	1.92552	7096.3074
15/16	1.92468	7069.1311	1.92511	7083.1511	1.92554	7097.1849

Fraction of an inch	3″ Log.	3″ Square.	4″ Log.	4″ Square.	5″ Log.	5″ Square.
0	1.92557	7098.0625	1.92600	7112.1111	1.92643	7126.173
1/16	1.92560	7098.9401	1.92603	7112.9896	1.92645	7127.053
1/8	1.92562	7099.8178	1.92605	7113.8682	1.92648	7127.932
3/16	1.92565	7100.6956	1.92608	7114.7468	1.92651	7128.811
1/4	1.92568	7101.5734	1.92611	7115.6254	1.92654	7129.691
5/16	1.92570	7102.4512	1.92613	7116.5042	1.92656	7130.571
3/8	1.92573	7103.3291	1.92616	7117.3829	1.92659	7131.450
7/16	1.92576	7104.2071	1.92619	7118.2617	1.92662	7132.330
1/2	1.92578	7105.0851	1.92621	7119.1406	1.92664	7133.210
9/16	1.92581	7105.9631	1.92624	7120.0196	1.92667	7134.089
5/8	1.92584	7106.8413	1.92627	7120.8985	1.92670	7134.969
11/16	1.92587	7107.7194	1.92629	7121.7776	1.92672	7135.849
3/4	1.92589	7108.5977	1.92632	7122.6567	1.92675	7136.729
13/16	1.92592	7109.4759	1.92635	7123.5358	1.92678	7137.609
7/8	1.92595	7110.3543	1.92637	7124.4150	1.92680	7138.489
15/16	1.92597	7111.2327	1.92640	7125.2943	1.92683	7139.369

84′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.92686	7140.2500	1.92728	7154.3403	1.92771	7168.4444
1/16	1.92688	7141.1302	1.92731	7155.2214	1.92774	7169.3264
1/8	1.92691	7142.0105	1.92734	7156.1025	1.92777	7170.2084
3/16	1.92694	7142.8909	1.92737	7156.9838	1.92779	7171.0905
1/4	1.92696	7143.7713	1.92739	7157.8650	1.92782	7171.9727
5/16	1.92699	7144.6517	1.92742	7158.7463	1.92785	7172.8548
3/8	1.92702	7145.5322	1.92745	7159.6277	1.92787	7173.7371
7/16	1.92704	7146.4128	1.92747	7160.5091	1.92790	7174.6194
1/2	1.92707	7147.2934	1.92750	7161.3906	1.92793	7175.5017
9/16	1.92710	7148.1741	1.92753	7162.2722	1.92795	7176.3841
5/8	1.92712	7149.0548	1.92755	7163.1538	1.92798	7177.2666
11/16	1.92715	7149.9356	1.92758	7164.0354	1.92801	7178.1491
3/4	1.92718	7150.8164	1.92761	7164.9171	1.92803	7179.0317
13/16	1.92720	7151.6973	1.92763	7165.7989	1.92806	7179.9143
7/8	1.92723	7152.5782	1.92766	7166.6807	1.92809	7180.7970
15/16	1.92726	7153.4592	1.92769	7167.5625	1.92811	7181.6797

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.92814	7182.5625	1.92857	7196.6944	1.92899	7210.8403
1/16	1.92817	7183.4453	1.92859	7197.5782	1.92902	7211.7249
1/8	1.92819	7184.3282	1.92862	7198.4619	1.92905	7212.6095
3/16	1.92822	7185.2112	1.92865	7199.3457	1.92907	7213.4942
1/4	1.92825	7186.0942	1.92867	7200.2296	1.92910	7214.3789
5/16	1.92827	7186.9772	1.92870	7201.1135	1.92913	7215.2637
3/8	1.92830	7187.8604	1.92873	7201.9975	1.92915	7216.1485
7/16	1.92833	7188.7435	1.92875	7202.8815	1.92918	7217.0334
1/2	1.92835	7189.6267	1.92878	7203.7656	1.92921	7217.9184
9/16	1.92838	7190.5100	1.92881	7204.6498	1.92923	7218.8034
5/8	1.92841	7191.3933	1.92883	7205.5340	1.92926	7219.6885
11/16	1.92843	7192.2767	1.92886	7206.4182	1.92929	7220.5736
3/4	1.92846	7193.1602	1.92889	7207.3025	1.92931	7221.4588
13/16	1.92849	7194.0436	1.92891	7208.1869	1.92934	7222.3440
7/8	1.92851	7194.9272	1.92894	7209.0713	1.92937	7223.2293
15/16	1.92854	7195.8108	1.92897	7209.9558	1.92939	7224.1146

85′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.92942	7225.0000	1.92984	7239.1736	1.93027	7253.3611
1/16	1.92945	7225.8854	1.92987	7240.0599	1.93030	7254.2483
1/8	1.92947	7226.7709	1.92990	7240.9463	1.93032	7255.1355
3/16	1.92950	7227.6565	1.92992	7241.8327	1.93035	7256.0228
1/4	1.92953	7228.5421	1.92995	7242.7192	1.93038	7256.9102
5/16	1.92955	7229.4278	1.92998	7243.6057	1.93040	7257.7976
3/8	1.92958	7230.3135	1.93000	7244.4923	1.93043	7258.6850
7/16	1.92961	7231.1992	1.93003	7245.3789	1.93046	7259.5725
1/2	1.92963	7232.0851	1.93006	7246.2656	1.93048	7260.4601
9/16	1.92966	7232.9709	1.93008	7247.1524	1.93051	7261.3477
5/8	1.92968	7233.8569	1.93011	7248.0392	1.93054	7262.2354
11/16	1.92971	7234.7429	1.93014	7248.9260	1.93056	7263.1231
3/4	1.92974	7235.6289	1.93016	7249.8129	1.93059	7264.0109
13/16	1.92976	7236.5150	1.93019	7250.6999	1.93061	7264.8987
7/8	1.92979	7237.4012	1.93022	7251.5869	1.93064	7265.7866
15/16	1.92982	7238.2874	1.93024	7252.4740	1.93067	7266.6745

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.93069	7267.5625	1.93112	7281.7778	1.93154	7296.0069
1/16	1.93072	7268.4505	1.93115	7282.6667	1.93157	7296.8967
1/8	1.93075	7269.3387	1.93117	7283.5557	1.93160	7297.7866
3/16	1.93077	7270.2268	1.93120	7284.4447	1.93162	7298.6765
1/4	1.93080	7271.1150	1.93122	7285.3338	1.93165	7299.5664
5/16	1.93083	7272.0033	1.93125	7286.2229	1.93168	7300.4564
3/8	1.93085	7272.8916	1.93128	7287.1121	1.93170	7301.3465
7/16	1.93088	7273.7800	1.93130	7288.0013	1.93173	7302.2366
1/2	1.93091	7274.6684	1.93133	7288.8906	1.93175	7303.1267
9/16	1.93093	7275.5569	1.93136	7289.7800	1.93178	7304.0170
5/8	1.93096	7276.4454	1.93138	7290.6694	1.93181	7304.9072
11/16	1.93099	7277.3340	1.93141	7291.5588	1.93183	7305.7976
3/4	1.93101	7278.2227	1 93144	7292.4484	1.93186	7306.6879
13/16	1.93104	7279.1114	1.93146	7293.3379	1.93189	7307.5784
7/8	1.93107	7280.0001	1.93149	7294.2275	1.93191	7308.4689
15/16	1.93109	7280.8889	1.93152	7295.1172	1.93194	7309.3594

85′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.93197	7310.2500	1.93239	7324.5069	1.93281	7338.7778
1/16	1.93199	7311.1407	1.93242	7325.3985	1.93284	7339.6702
1/8	1.93202	7312.0314	1.93244	7326.2900	1.93286	7340.5626
3/16	1.93205	7312.9221	1.93247	7327.1817	1.93289	7341.4551
1/4	1.93207	7313.8129	1.93249	7328.0734	1.93292	7342.3477
5/16	1.93210	7314.7038	1.93252	7328.9651	1.93294	7343.2403
3/8	1.93212	7315.5947	1.93255	7329.8569	1.93297	7344.1329
7/16	1.93215	7316.4857	1.93257	7330.7487	1.93300	7345.0256
1/2	1.93218	7317.3767	1.93260	7331.6406	1.93302	7345.9184
9/16	1.93220	7318.2678	1.93263	7332.5326	1.93305	7346.8112
5/8	1.93223	7319.1590	1.93265	7333.4246	1.93308	7347.7041
11/16	1.93226	7320.0502	1.93268	7334.3167	1.93310	7348.5970
3/4	1.93228	7320.9414	1.93271	7335.2088	1.93313	7349.4900
13/16	1.93231	7321.8327	1.93273	7336.1009	1.93315	7350.3831
7/8	1.93234	7322.7241	1.93276	7336.9932	1.93318	7351.2762
15/16	1.93236	7323.6155	1.93279	7337.8854	1.93321	7352.1693

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.93323	7353.0625	1.93366	7367.3611	1.93408	7381.6736
1/16	1.93326	7353.9558	1.93368	7368.2552	1.93410	7382.5686
1/8	1.93329	7354.8491	1.93371	7369.1494	1.93413	7383.4637
3/16	1.93331	7355.7424	1.93374	7370.0436	1.93416	7384.3588
1/4	1.93334	7356.6359	1.93376	7370.9379	1.93418	7385.2539
5/16	1.93337	7357.5293	1.93379	7371.8323	1.93421	7386.1491
3/8	1.93339	7358.4229	1.93381	7372.7267	1.93424	7387.0444
7/16	1.93342	7359.3164	1.93384	7373.6211	1.93426	7387.9397
1/2	1.93345	7360.2101	1.93387	7374.5156	1.93429	7388.8351
9/16	1.93347	7361.1038	1.93389	7375.4102	1.93431	7389.7305
5/8	1.93350	7361.9975	1.93392	7376.3048	1.93434	7390.6260
11/16	1.93352	7362.8913	1.93395	7377.1995	1.93437	7391.5215
3/4	1.93355	7363.7852	1.93397	7378.0942	1.93439	7392.4171
13/16	1.93358	7364.6791	1.93400	7378.9890	1.93442	7393.3127
7/8	1.93360	7365.5730	1.93402	7379.8838	1.93445	7394.2084
15/16	1.93363	7366.4670	1.93405	7380.7787	1.93447	7395.1042

86′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.93450	7396.0000	1.93492	7410.3403	1.93534	7424.6944
1/16	1.93452	7396.8959	1.93495	7411.2370	1.93537	7425.5920
1/8	1.93455	7397.7918	1.93497	7412.1338	1.93539	7426.4897
3/16	1.93458	7398.6877	1.93500	7413.0306	1.93542	7427.3874
1/4	1.93460	7399.5838	1.93502	7413.9275	1.93544	7428.2852
5/16	1.93463	7400.4798	1.93505	7414.8245	1.93547	7429.1830
3/8	1.93466	7401.3760	1.93508	7415.7215	1.93550	7430.0808
7/16	1.93468	7402.2722	1.93510	7416.6185	1.93552	7430.9788
1/2	1.93471	7403.1684	1.93513	7417.5156	1.93555	7431.8767
9/16	1.93474	7404.0647	1.93516	7418.4128	1.93558	7432.7748
5/8	1.93476	7404.9610	1.93518	7419.3100	1.93560	7433.6729
11/16	1.93479	7405.8574	1.93521	7420.2073	1.93563	7434.5710
3/4	1.93481	7406.7539	1.93523	7421.1046	1.93565	7435.4692
13/16	1.93484	7407.6504	1.93526	7422.0020	1.93568	7436.3674
7/8	1.93487	7408.5470	1.93529	7422.8994	1.93571	7437.2657
15/16	1.93489	7409.4436	1.93531	7423.7969	1.93573	7438.1641

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.93576	7439.0625	1.93618	7453.4444	1.93660	7467.8403
1/16	1.93579	7439.9610	1.93620	7454.3438	1.93662	7468.7405
1/8	1.93581	7440.8595	1.93623	7455.2432	1.93665	7469.6407
3/16	1.93584	7441.7581	1.93626	7456.1426	1.93668	7470.5410
1/4	1.93586	7442.6567	1.93628	7457.0421	1.93670	7471.4414
5/16	1.93589	7443.5554	1.93631	7457.9417	1.93673	7472.3418
3/8	1.93592	7444.4541	1.93634	7458.8413	1.93675	7473.2423
7/16	1.93594	7445.3529	1.93636	7459.7409	1.93678	7474.1428
1/2	1.93597	7446.2517	1.93639	7460.6406	1.93681	7475.0434
9/16	1.93600	7447.1506	1.93641	7461.5404	1.93683	7475.9440
5/8	1.93602	7448.0496	1.93644	7462.4402	1.93686	7476.8447
11/16	1.93605	7448.9486	1.93647	7463.3401	1.93689	7477.7455
3/4	1.93607	7449.8477	1.93649	7464.2400	1.93691	7478.6463
13/16	1.93610	7450.7468	1.93652	7465.1400	1.93694	7479.5471
7/8	1.93613	7451.6459	1.93655	7466.0400	1.93696	7480.4480
15/16	1.93615	7452.5452	1.93657	7466.9401	1.93699	7481.3490

86′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.93702	7482.2500	1.93743	7496.6736	1.93785	7511 1111
1/16	1.93704	7483.1511	1.93746	7497.5755	1.93788	7512.0139
1/8	1.93707	7484.0522	1.93749	7498.4775	1.93790	7512.9168
3/16	1.93709	7484.9534	1.93751	7499.3796	1.93793	7513.8197
1/4	1.93712	7485.8546	1.93754	7500.2817	1.93796	7514.7227
5/16	1.93715	7486.7559	1.93756	7501.1838	1.93798	7515.6257
3/8	1.93717	7487.6572	1.93759	7502.0860	1.93801	7516.5288
7/16	1.93720	7488.5586	1.93762	7502.9883	1.93803	7517.4319
1/2	1.93723	7489.4601	1.93764	7503.8906	1.93806	7518.3351
9/16	1.93725	7490.3616	1.93767	7504.7930	1.93809	7519.2383
5/8	1.93728	7491.2631	1.93770	7505.6954	1.93811	7520.1416
11/16	1.93730	7492.1647	1.93772	7506.5979	1.93814	7521.0449
3/4	1.93733	7493.0664	1.93775	7507.5004	1.93817	7521.9484
13/16	1.93736	7493.9681	1.93777	7508.4030	1.93819	7522.8518
7/8	1.93738	7494.8699	1.93780	7509.3057	1.93822	7523.7553
15/16	1.93741	7495.7717	1.93783	7510.2084	1.93824	7524.6589

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.93827	7525.5625	1.93869	7540.0278	1.93910	7554.5069
1/16	1.93830	7526.4662	1.93871	7540.9323	1.93913	7555.4124
1/8	1.93832	7527.3699	1.93874	7541.8369	1.93916	7556.3178
3/16	1.93835	7528.2737	1.93876	7542.7416	1.93918	7557.2233
1/4	1.93837	7529.1775	1.93879	7543.6463	1.93921	7558.1289
5/16	1.93840	7530.0814	1.93882	7544.5510	1.93923	7559.0345
3/8	1.93843	7530.9854	1.93884	7545.4558	1.93926	7559.9402
7/16	1.93845	7531.8894	1.93887	7546.3607	1.93929	7560.8459
1/2	1.93848	7532.7934	1.93889	7547.2656	1.93931	7561.7517
9/16	1.93850	7533.6975	1.93892	7548.1706	1.93934	7562.6576
5/8	1.93853	7534.6017	1.93895	7549.0756	1.93936	7563.5635
11/16	1.93856	7535.5059	1.93897	7549.9807	1.93939	7564.4694
3/4	1.93858	7536.4102	1.93900	7550.8859	1.93942	7565.3754
13/16	1.93861	7537.3145	1.93902	7551.7910	1.93944	7566.2815
7/8	1.93863	7538.2189	1.93905	7552 6963	1.93947	7567.1876
15/16	1.93866	7539.1233	1.93908	7553.6016	1.93949	7568.0938

87′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.93952	7569.0000	1.93994	7583.5069	1.94035	7598.0278
1/16	1.93955	7569.9063	1.93996	7584.4141	1.94038	7598.9358
1/8	1.93957	7570.8126	1.93999	7585.3213	1.94040	7599.8439
3/16	1.93960	7571.7190	1.94001	7586.2285	1.94043	7600.7520
1/4	1.93962	7572.6254	1.94004	7587.1359	1.94045	7601.6602
5/16	1.93965	7573.5319	1.94006	7588.0432	1.94048	7602.5684
3/8	1.93968	7574.4385	1.94009	7588.9506	1.94051	7603.4767
7/16	1.93970	7575.3451	1.94012	7589.8581	1.94053	7604.3850
1/2	1.93973	7576.2517	1.94014	7590.7656	1.94056	7605.2934
9/16	1.93975	7577.1584	1.94017	7591.6732	1.94058	7606.2019
5/8	1.93978	7578.0652	1.94019	7592.5808	1.94061	7607.1104
11/16	1.93981	7578.9720	1.94022	7593.4885	1.94064	7608.0189
3/4	1.93983	7579.8789	1.94025	7594.3963	1.94066	7608.9275
13/16	1.93986	7580.7858	1.94027	7595.3041	1.94069	7609.8362
7/8	1.93988	7581.6928	1.94030	7596.2119	1.94071	7610.7449
15/16	1.93991	7582.5999	1.94032	7597.1198	1.94074	7611.6537

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.94077	7612.5625	1.94118	7627.1111	1.94159	7641.6736
1/16	1.94079	7613.4714	1.94121	7628.0209	1.94162	7642.5842
1/8	1.94082	7614.3803	1.94123	7628.9307	1.94165	7643.4949
3/16	1.94084	7615.2893	1.94126	7629.8405	1.94167	7644.4056
1/4	1.94087	7616.1984	1.94128	7630.7504	1.94170	7645.3164
5/16	1.94090	7617.1074	1.94131	7631.6604	1.94172	7646.2272
3/8	1.94092	7618.0166	1.94134	7632.5704	1.94175	7647.1381
7/16	1.94095	7618.9258	1.94136	7633.4805	1.94178	7648.0491
1/2	1.94097	7619.8351	1.94139	7634.3906	1.94180	7648.9601
9/16	1.94100	7620.7444	1.94141	7635.3008	1.94183	7649.8711
5/8	1.94102	7621.6538	1.94144	7636.2110	1.94185	7650.7822
11/16	1.94105	7622.5632	1.94146	7637.1213	1.94188	7651.6934
3/4	1.94108	7623.4727	1.94149	7638.0317	1.94190	7652.604
13/16	1.94110	7624.3822	1.94152	7638.9421	1.94193	7653.5159
7/8	1.94113	7625.2918	1.94154	7639.8525	1.94196	7654.4271
15/16	1.94115	7626.2014	1.94157	7640.7630	1.94198	7655.338

87′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.94201	7656.2500	1.94242	7670.8403	1.94283	7685.4444
1/16	1.94203	7657.1615	1.94245	7671.7526	1.94286	7686.3577
⅛	1.94206	7658.0730	1.94247	7672.6650	1.94289	7687.2709
3/16	1.94209	7658.9846	1.94250	7673.5775	1.94291	7688.1843
¼	1.94211	7659.8963	1.94252	7674.4900	1.94294	7689.0977
5/16	1.94214	7660.8080	1.94255	7675.4026	1.94296	7690.0111
⅜	1.94216	7661.7197	1.94258	7676.3152	1.94299	7690.9246
7/16	1.94219	7662.6315	1.94260	7677.2279	1.94302	7691.8381
½	1.94221	7663.5434	1.94263	7678.1406	1.94304	7692.7517
9/16	1.94224	7664.4553	1.94265	7679.0534	1.94307	7693.6654
⅝	1.94227	7665.3673	1.94268	7679.9663	1.94309	7694.5791
11/16	1.94229	7666.2793	1.94271	7680.8792	1.94312	7695.4929
¾	1.94232	7667.1914	1.94273	7681.7921	1.94314	7696.4067
13/16	1.94234	7668.1035	1.94276	7682.7051	1.94317	7697.3206
⅞	1.94237	7669.0157	1.94278	7683.6182	1.94320	7698.2345
15/16	1.94240	7669.9280	1.94281	7684.5313	1.94322	7699.1485

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.94325	7700.0625	1.94366	7714.6944	1.94407	7729.3403
1/16	1.94327	7700.9766	1.94369	7715.6094	1.94410	7730.2561
⅛	1.94330	7701.8907	1.94371	7716.5244	1.94412	7731.1720
3/16	1.94332	7702.8049	1.94374	7717.4395	1.94415	7732.0879
¼	1.94335	7703.7192	1.94376	7718.3546	1.94417	7733.0039
5/16	1.94338	7704.6335	1.94379	7719.2698	1.94420	7733.9199
⅜	1.94340	7705.5479	1.94381	7720.1850	1.94423	7734.8360
7/16	1.94343	7706.4623	1.94384	7721.1003	1.94425	7735.7522
½	1.94345	7707.3767	1.94387	7722.0156	1.94428	7736.6684
9/16	1.94348	7708.2913	1.94389	7722.9310	1.94430	7737.5847
⅝	1.94350	7709.2058	1.94392	7723.8465	1.94433	7738.5010
11/16	1.94353	7710.1205	1.94394	7724.7620	1.94435	7739.4173
¾	1.94356	7711.0352	1.94397	7725.6775	1.94438	7740.3338
13/16	1.94358	7711.9499	1.94399	7726.5931	1.94441	7741.2502
⅞	1.94361	7712.8647	1.94402	7727.5088	1.94443	7742.1668
15/16	1.94363	7713.7795	1.94405	7728.4245	1.94446	7743.0834

88′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.94448	7744.0000	1.94489	7758.6736	1.94530	7773.3611
1/16	1.94451	7744.9167	1.94492	7759.5912	1.94533	7774.2795
1/8	1.94453	7745.8334	1.94495	7760.5088	1.94536	7775.1980
3/16	1.94456	7746.7502	1.94497	7761.4265	1.94538	7776.1166
1/4	1.94459	7747.6671	1.94500	7762.3442	1.94541	7777.0352
5/16	1.94461	7748.5840	1.94502	7763.2620	1.94543	7777.9538
3/8	1.94464	7749.5010	1.94505	7764.1798	1.94546	7778.8725
7/16	1.94466	7750.4180	1.94507	7765.0977	1.94548	7779.7913
1/2	1.94469	7751.3351	1.94510	7766.0156	1.94551	7780.7101
9/16	1.94471	7752.2522	1.94512	7766.9336	1.94554	7781.6289
5/8	1.94474	7753.1694	1.94515	7767.8517	1.94556	7782.5479
11/16	1.94477	7754.0866	1.94518	7768.7698	1.94559	7783.4668
3/4	1.94479	7755.0039	1.94520	7769.6879	1.94561	7784.3859
13/16	1.94482	7755.9213	1.94523	7770.6061	1.94564	7785.3049
7/8	1.94484	7756.8387	1.94525	7771.5244	1.94566	7786.2241
15/16	1.94487	7757.7561	1.94528	7772.4427	1.94569	7787.1433

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.94571	7788.0625	1.94612	7802.7778	1.94653	7817.5069
1/16	1.94574	7788.9818	1.94615	7803.6979	1.94656	7818.4280
1/8	1.94577	7789.9012	1.94618	7804.6182	1.94659	7819.3491
3/16	1.94579	7790.8206	1.94620	7805.5384	1.94661	7820.2702
1/4	1.94582	7791.7400	1.94623	7806.4588	1.94664	7821.1914
5/16	1.94584	7792.6595	1.94625	7807.3792	1.94666	7822.1127
3/8	1.94587	7793.5791	1.94628	7808.2996	1.94669	7823.0340
7/16	1.94589	7794.4987	1.94630	7809.2201	1.94671	7823.9553
1/2	1.94592	7795.4184	1.94633	7810.1406	1.94674	7824.8767
9/16	1.94595	7796.3381	1.94636	7811.0612	1.94676	7825.7982
5/8	1.94597	7797.2579	1.94638	7811.9819	1.94679	7826.7197
11/16	1.94600	7798.1778	1.94641	7812.9026	1.94682	7827.6413
3/4	1.94602	7799.0977	1.94643	7813.8234	1.94684	7828.5629
13/16	1.94605	7800.0176	1.94646	7814.7442	1.94687	7829.4846
7/8	1.94607	7800.9376	1.94648	7815.6650	1.94689	7830.4064
15/16	1.94610	7801.8577	1.94651	7816.5860	1.94692	7831.3282

88′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.94694	7832.2500	1.94735	7847.0069	1.94776	7861.7778
1/16	1.94697	7833.1719	1.94738	7847.9297	1.94779	7862.7014
1/8	1.94699	7834.0939	1.94740	7848.8525	1.94781	7863.6251
3/16	1.94702	7835.0159	1.94743	7849.7754	1.94784	7864.5489
1/4	1.94705	7835.9379	1.94745	7850.6984	1.94786	7865.4727
5/16	1.94707	7836.8601	1.94748	7851.6213	1.94789	7866.3965
3/8	1.94710	7837.7822	1.94751	7852.5444	1.94791	7867.3204
7/16	1.94712	7838.7045	1.94753	7853.4675	1.94794	7868.2444
1/2	1.94715	7839.6267	1.94756	7854.3906	1.94796	7869.1684
9/16	1.94717	7840.5491	1.94758	7855.3138	1.94799	7870.0925
5/8	1.94720	7841.4715	1.94761	7856.2371	1.94802	7871.0166
11/16	1.94722	7842.3939	1.94763	7857.1604	1.94804	7871.9408
3/4	1.94725	7843.3164	1.94766	7858.0838	1.94807	7872.8650
13/16	1.94728	7844.2390	1.94768	7859.0072	1.94809	7873.7893
7/8	1.94730	7845.1616	1.94771	7859.9307	1.94812	7874.7137
15/16	1.94733	7846.0842	1.94773	7860.8542	1.94814	7875.6380

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.94817	7876.5625	1.94858	7891.3611	1.94898	7906.1736
1/16	1.94819	7877.4870	1.94860	7892.2865	1.94901	7907.0999
1/8	1.94822	7878.4116	1.94863	7893.2119	1.94903	7908.0262
3/16	1.94824	7879.3362	1.94865	7894.1374	1.94906	7908.9525
1/4	1.94827	7880.2609	1.94868	7895.0629	1.94908	7909.8789
5/16	1.94830	7881.1856	1.94870	7895.9885	1.94911	7910.8054
3/8	1.94832	7882.1104	1.94873	7896.9142	1.94914	7911.7319
7/16	1.94835	7883.0352	1.94875	7897.8399	1.94916	7912.6584
1/2	1.94837	7883.9601	1.94878	7898.7656	1.94919	7913.5851
9/16	1.94840	7884.8850	1.94881	7899.6914	1.94921	7914.5117
5/8	1.94842	7885.8100	1.94883	7900.6173	1.94924	7915.4385
11/16	1.94845	7886.7351	1.94886	7901.5432	1.94926	7916.3653
3/4	1.94847	7887.6602	1.94888	7902.4692	1.94929	7917.2921
13/16	1.94850	7888.5853	1.94891	7903.3952	1.94931	7918.2190
7/8	1.94853	7889.5105	1.94893	7904.3213	1.94934	7919.1459
15/16	1.94855	7890.4358	1.94896	7905.2474	1.94936	7920.0729

89′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.94939	7921.0000	1.94980	7935.8403	1.95020	7950.6944
1/16	1.94942	7921.9271	1.94982	7936.7683	1.95023	7951.6233
1/8	1.94944	7922.8543	1.94985	7937.6963	1.95025	7952.5522
3/16	1.94947	7923.7815	1.94987	7938.6244	1.95028	7953.4811
1/4	1.94949	7924.7088	1.94990	7939.5525	1.95030	7954.4102
5/16	1.94952	7925.6361	1.94992	7940.4807	1.95033	7955.3392
3/8	1.94954	7926.5635	1.94995	7941.4090	1.95035	7956.2683
7/16	1.94957	7927.4909	1.94997	7942.3373	1.95038	7957.1975
1/2	1.94959	7928.4184	1.95000	7943.2656	1.95041	7958.1267
9/16	1.94962	7929.3459	1.95002	7944.1940	1.95043	7959.0560
5/8	1.94964	7930.2735	1.95005	7945.1225	1.95046	7959.9854
11/16	1.94967	7931.2012	1.95008	7946.0510	1.95048	7960.9147
3/4	1.94969	7932.1289	1.95010	7946.9796	1.95051	7961.8442
13/16	1.94972	7933.0567	1.95013	7947.9082	1.95053	7962.7737
7/8	1.94975	7933.9845	1.95015	7948.8369	1.95056	7963.7032
15/16	1.94977	7934.9124	1.95018	7949.7657	1.95058	7964.6328

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.95061	7965.5625	1.95101	7980.4444	1.95142	7995.3403
1/16	1.95063	7966.4922	1.95104	7981.3750	1.95144	7996.2717
1/8	1.95066	7967.4220	1.95106	7982.3057	1.95147	7997.2032
3/16	1.95068	7968.3518	1.95109	7983.2364	1.95149	7998.1348
1/4	1.95071	7969.2817	1.95111	7984.1671	1.95152	7999.0664
5/16	1.95073	7970.2116	1.95114	7985.0979	1.95154	7999.9981
3/8	1.95076	7971.1416	1.95117	7986.0288	1.95157	8000.9298
7/16	1.95079	7972.0716	1.95119	7986.9597	1.95160	8001.8616
1/2	1.95081	7973.0017	1.95122	7987.8906	1.95162	8002.7934
9/16	1.95084	7973.9319	1.95124	7988.8216	1.95165	8003.7253
5/8	1.95086	7974.8621	1.95127	7989.7527	1.95167	8004.6572
11/16	1.95089	7975.7923	1.95129	7990.6838	1.95170	8005.5892
3/4	1.95091	7976.7227	1.95132	7991.6150	1.95172	8006.5213
13/16	1.95094	7977.6530	1.95134	7992.5463	1.95175	8007.4534
7/8	1.95096	7978.5834	1.95137	7993.4775	1.95177	8008.3855
15/16	1.95099	7979.5139	1.95139	7994.4089	1.95180	8009.3177

89′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.95182	8010.2500	1.95223	8025.1736	1.95263	8040.1111
1/16	1.95185	8011.1823	1.95225	8026.1068	1.95266	8041.0452
⅛	1.95187	8012.1147	1.95228	8027.0400	1.95268	8041.9793
3/16	1.95190	8013.0471	1.95230	8027.9733	1.95271	8042.9134
¼	1.95192	8013.9796	1.95233	8028.9067	1.95273	8043.8477
5/16	1.95195	8014.9121	1.95235	8029.8401	1.95276	8044.7819
⅜	1.95197	8015.8447	1.95238	8030.7735	1.95278	8045.7163
7/16	1.95200	8016.7774	1.95240	8031.7071	1.95281	8046.6506
½	1.95203	8017.7101	1.95243	8032.6406	1.95283	8047.5851
9/16	1.95205	8018.6428	1.95245	8033.5742	1.95286	8048.5196
⅝	1.95208	8019.5756	1.95248	8034.5079	1.95288	8049.4541
11/16	1.95210	8020.5085	1.95250	8035.4417	1.95291	8050.3887
¾	1.95213	8021.4414	1.95253	8036.3754	1.95293	8051.3234
13/16	1.95215	8022.3744	1.95256	8037.3093	1.95296	8052.2581
⅞	1.95218	8023.3074	1.95258	8038.2432	1.95298	8053.1928
15/16	1.95220	8024.2405	1.95261	8039.1771	1.95301	8054.1276

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.95303	8055.0625	1.95344	8070.0278	1.95384	8085.0069
1/16	1.95306	8055.9974	1.95346	8070.9636	1.95387	8085.9436
⅛	1.95308	8056.9324	1.95349	8071.8994	1.95389	8086.8803
3/16	1.95311	8057.8674	1.95351	8072.8353	1.95392	8087.8171
¼	1.95314	8058.8025	1.95354	8073.7713	1.95394	8088.7539
5/16	1.95316	8059.7377	1.95356	8074.7073	1.95397	8089.6908
⅜	1.95319	8060.6729	1.95359	8075.6433	1.95399	8090.6277
7/16	1.95321	8061.6081	1.95361	8076.5795	1.95402	8091.5647
½	1.95324	8062.5434	1.95364	8077.5156	1.95404	8092.5017
9/16	1.95326	8063.4788	1.95366	8078.4519	1.95407	8093.4388
⅝	1.95329	8064.4142	1.95369	8079.3881	1.95409	8094.3760
11/16	1.95331	8065.3496	1.95371	8080.3245	1.95412	8095.3132
¾	1.95334	8066.2852	1.95374	8081.2609	1.95414	8096.2504
13/16	1.95336	8067.2207	1.95376	8082.1973	1.95417	8097.1877
⅞	1.95339	8068.1564	1.95379	8083.1338	1.95419	8098.1251
15/16	1.95341	8069.0920	1.95382	8084.0703	1.95422	8099.0625

90′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.95424	8100.0000	1.95464	8115.0069	1.95505	8130.0278
1/16	1.95427	8100.9375	1.95467	8115.9453	1.95507	8130.9670
1/8	1.95429	8101.8751	1.95469	8116.8838	1.95510	8131.9064
3/16	1.95432	8102.8127	1.95472	8117.8223	1.95512	8132.8457
1/4	1.95434	8103.7504	1.95474	8118.7609	1.95515	8133.7852
5/16	1.95437	8104.6882	1.95477	8119.6995	1.95517	8134.7246
3/8	1.95439	8105.6260	1.95480	8120.6381	1.95520	8135.6642
7/16	1.95442	8106.5638	1.95482	8121.5769	1.95522	8136.6038
1/2	1.95444	8107.5017	1.95485	8122.5156	1.95525	8137.5434
9/16	1.95447	8108.4397	1.95487	8123.4545	1.95527	8138.4831
5/8	1.95449	8109.3777	1.95490	8124.3933	1.95530	8139.4229
11/16	1.95452	8110.3158	1.95492	8125.3323	1.95532	8140.3627
3/4	1.95454	8111.2539	1.95495	8126.2713	1.95535	8141.3025
13/16	1.95457	8112.1921	1.95497	8127.2103	1.95537	8142.2424
7/8	1.95459	8113.1303	1.95500	8128.1494	1.95540	8143.1824
15/16	1.95462	8114.0686	1.95502	8129.0886	1.95542	8144.1224

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.95545	8145.0625	1.95585	8160.1111	1.95625	8175.1736
1/16	1.95547	8146.0026	1.95587	8161.0521	1.95627	8176.1155
1/8	1.95550	8146.9428	1.95590	8161.9932	1.95630	8177.0574
3/16	1.95552	8147.8831	1.95592	8162.9343	1.95632	8177.9994
1/4	1.95555	8148.8234	1.95595	8163.8754	1.95635	8178.9414
5/16	1.95557	8149.7637	1.95597	8164.8167	1.95637	8179.8835
3/8	1.95560	8150.7041	1.95600	8165.7579	1.95640	8180.8256
7/16	1.95562	8151.6446	1.95602	8166.6992	1.95642	8181.7678
1/2	1.95565	8152.5851	1.95605	8167.6406	1.95645	8182.7101
9/16	1.95567	8153.5256	1.95607	8168.5821	1.95647	8183.6524
5/8	1.95570	8154.4663	1.95610	8169.5235	1.95650	8184.5947
11/16	1.95572	8155.4069	1.95612	8170.4651	1.95652	8185.5371
3/4	1.95575	8156.3477	1.95615	8171.4067	1.95655	8186.4796
13/16	1.95577	8157.2884	1.95617	8172.3483	1.95657	8187.4221
7/8	1.95580	8158.2293	1.95620	8173.2900	1.95660	8188.3647
15/16	1.95582	8159.1702	1.95622	8174.2318	1.95662	8189.3073

90′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.95665	8190.2500	1.95705	8205.3403	1.95745	8220.4444
1/16	1.95667	8191.1927	1.95707	8206.2839	1.95747	8221.3889
1/8	1.95670	8192.1355	1.95710	8207.2275	1.95750	8222.3334
3/16	1.95672	8193.0784	1.95712	8208.1713	1.95752	8223.2780
1/4	1.95675	8194.0213	1.95715	8209.1150	1.95755	8224.2227
5/16	1.95677	8194.9642	1.95717	8210.0588	1.95757	8225.1673
3/8	1.95680	8195.9072	1.95720	8211.0027	1.95760	8226.1121
7/16	1.95682	8196.8503	1.95722	8211.9466	1.95762	8227.0569
1/2	1.95685	8197.7934	1.95725	8212.8906	1.95765	8228.0017
9/16	1.95687	8198.7366	1.95727	8213.8347	1.95767	8228.9466
5/8	1.95690	8199.6798	1.95730	8214.7788	1.95770	8229.8916
11/16	1.95692	8200.6231	1.95732	8215.7229	1.95772	8230.8366
3/4	1.95695	8201.5664	1.95735	8216.6671	1.95775	8231.7817
13/16	1.95697	8202.5098	1.95737	8217.6114	1.95777	8232.7268
7/8	1.95700	8203.4532	1.95740	8218.5557	1.95780	8233.6720
15/16	1.95702	8204.3967	1.95742	8219.5000	1.95782	8234.6172

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.95785	8235.5625	1.95825	8250.6944	1.95864	8265.8403
1/16	1.95787	8236.5078	1.95827	8251.6407	1.95867	8266.7874
1/8	1.95790	8237.4532	1.95830	8252.5869	1.95869	8267.7345
3/16	1.95792	8238.3987	1.95832	8253.5332	1.95872	8268.6817
1/4	1.95795	8239.3442	1.95834	8254.4796	1.95874	8269.6289
5/16	1.95797	8240.2897	1.95837	8255.4260	1.95877	8270.5762
3/8	1.95800	8241.2354	1.95839	8256.3725	1.95879	8271.5235
7/16	1.95802	8242.1810	1.95842	8257.3190	1.95882	8272.4709
1/2	1.95805	8243.1267	1.95844	8258.2656	1.95884	8273.4184
9/16	1.95807	8244.0725	1.95847	8259.2123	1.95887	8274.3659
5/8	1.95810	8245.0183	1.95849	8260.1590	1.95889	8275.3135
11/16	1.95812	8245.9642	1.95852	8261.1057	1.95892	8276.2611
3/4	1.95815	8246.9102	1.95854	8262.0525	1.95894	8277.2088
13/16	1.95817	8247.8561	1.95857	8262.9994	1.95897	8278.1565
7/8	1.95820	8248.8022	1.95859	8263.9463	1.95899	8279.1043
15/16	1.95822	8249.7483	1.95862	8264.8933	1.95902	8280.0521

91′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.95904	8281.0000	1.95944	8296.1736	1.95984	8311.3611
1/16	1.95907	8281.9479	1.95946	8297.1224	1.95986	8312.3108
1/8	1.95909	8282.8959	1.95949	8298.0713	1.95989	8313.2605
3/16	1.95912	8283.8440	1.95951	8299.0202	1.95991	8314.2103
1/4	1.95914	8284.7921	1.95954	8299.9692	1.95994	8315.1602
5/16	1.95917	8285.7403	1.95956	8300.9182	1.95996	8316.1101
3/8	1.95919	8286.6885	1.95959	8301.8673	1.95998	8317.0600
7/16	1.95922	8287.6367	1.95961	8302.8164	1.96001	8318.0100
1/2	1.95924	8288.5851	1.95964	8303.7656	1.96003	8318.9601
9/16	1.95927	8289.5334	1.95966	8304.7149	1.96006	8319.9102
5/8	1.95929	8290.4819	1.95969	8305.6642	1.96008	8320.8604
11/16	1.95931	8291.4304	1.95971	8306.6135	1.96011	8321.8106
3/4	1.95934	8292.3789	1.95974	8307.5629	1.96013	8322.7609
13/16	1.95936	8293.3275	1.95976	8308.5124	1.96016	8323.7112
7/8	1.95939	8294.2762	1.95979	8309.4619	1.96018	8324.6616
15/16	1.95941	8295.2249	1.95981	8310.4115	1.96021	8325.6120

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.96023	8326.5625	1.96063	8341.7778	1.96103	8357.0069
1/16	1.96026	8327.5130	1.96065	8342.7292	1.96105	8357.9592
1/8	1.96028	8328.4637	1.96068	8343.6807	1.96107	8358.9116
3/16	1.96031	8329.4143	1.96070	8344.6322	1.96110	8359.8640
1/4	1.96033	8330.3650	1.96073	8345.5838	1.96112	8360.8164
5/16	1.96036	8331.3158	1.96075	8346.5354	1.96115	8361.7689
3/8	1.96038	8332.2666	1.96078	8347.4871	1.96117	8362.7215
7/16	1.96041	8333.2175	1.96080	8348.4388	1.96120	8363.6741
1/2	1.96043	8334.1684	1.96083	8349.3906	1.96122	8364.6267
9/16	1.96046	8335.1194	1.96085	8350.3425	1.96125	8365.5795
5/8	1.96048	8336.0704	1.96088	8351.2944	1.96127	8366.5322
11/16	1.96051	8337.0215	1.96090	8352.2463	1.96130	8367.4851
3/4	1.96053	8337.9727	1.96093	8353.1984	1.96132	8368.4379
13/16	1.96056	8338.9239	1.96095	8354.1504	1.96135	8369.3909
7/8	1.96058	8339.8751	1.96098	8355.1025	1.96137	8370.3439
15/16	1.96060	8340.8264	1.96100	8356.0547	1.96140	8371.2969

91′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.96142	8372.2500	1.96182	8387.5069	1.96221	8402.7778
1/16	1.96145	8373.2032	1.96184	8388.4610	1.96224	8403.7327
1/8	1.96147	8374.1564	1.96187	8389.4150	1.96226	8404.6876
3/16	1.96150	8375.1096	1.96189	8390.3692	1.96229	8405.6426
1/4	1.96152	8376.0629	1.96192	8391.3234	1.96231	8406.5977
5/16	1.96154	8377.0163	1.96194	8392.2776	1.96233	8407.5528
3/8	1.96157	8377.9697	1.96196	8393.2319	1.96236	8408.5079
7/16	1.96159	8378.9232	1.96199	8394.1862	1.96238	8409.4631
1/2	1.96162	8379.8767	1.96201	8395.1406	1.96241	8410.4184
9/16	1.96164	8380.8303	1.96204	8396.0951	1.96243	8411.3737
5/8	1.96167	8381.7840	1.96206	8397.0496	1.96246	8412.3291
11/16	1.96169	8382.7377	1.96209	8398.0042	1.96248	8413.2845
3/4	1.96172	8383.6914	1.96211	8398.9588	1.96251	8414.2400
13/16	1.96174	8384.6452	1.96214	8399.9134	1.96253	8415.1956
7/8	1.96177	8385.5991	1.96216	8400.8682	1.96256	8416.1512
15/16	1.96179	8386.5530	1.96219	8401.8229	1.96258	8417.1068

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.96261	8418.0625	1.96300	8433.3611	1.96339	8448.6736
1/16	1.96263	8419.0183	1.96302	8434.3177	1.96342	8449.6311
1/8	1.96266	8419.9741	1.96305	8435.2744	1.96344	8450.5887
3/16	1.96268	8420.9299	1.96307	8436.2311	1.96347	8451.5463
1/4	1.96270	8421.8859	1.96310	8437.1879	1.96349	8452.5039
5/16	1.96273	8422.8418	1.96312	8438.1448	1.96352	8453.4616
3/8	1.96275	8423.7979	1.96315	8439.1017	1.96354	8454.4194
7/16	1.96278	8424.7539	1.96317	8440.0586	1.96357	8455.3772
1/2	1.96280	8425.7101	1.96320	8441.0156	1.96359	8456.3351
9/16	1.96283	8426.6663	1.96322	8441.9727	1.96362	8457.2930
5/8	1.96285	8427.6225	1.96325	8442.9298	1.96364	8458.2510
11/16	1.96288	8428.5788	1.96327	8443.8870	1.96366	8459.2090
3/4	1.96290	8429.5352	1.96330	8444.8442	1.96369	8460.1671
13/16	1.96293	8430.4916	1.96332	8445.8015	1.96371	8461.1252
7/8	1.96295	8431.4480	1.96335	8446.7588	1.96374	8462.0834
15/16	1.96298	8432.4045	1.96337	8447.7162	1.96376	8463.0417

92′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.96379	8464.0000	1.96418	8479.3403	1.96457	8494.6944
1/16	1.96381	8464.9584	1.96421	8480.2995	1.96460	8495.6545
⅛	1.96384	8465.9168	1.96423	8481.2588	1.96462	8496.6147
3/16	1.96386	8466.8752	1.96425	8482.2181	1.96465	8497.5749
¼	1.96389	8467.8338	1.96428	8483.1775	1.96467	8498.5352
5/16	1.96391	8468.7923	1.96430	8484.1370	1.96470	8499.4955
⅜	1.96394	8469.7510	1.96433	8485.0965	1.96472	8500.4558
7/16	1.96396	8470.7097	1.96435	8486.0560	1.96475	8501.4163
½	1.96398	8471.6684	1.96438	8487.0156	1.96477	8502.3767
9/16	1.96401	8472.6272	1.96440	8487.9753	1.96479	8503.3373
⅝	1.96403	8473.5860	1.96443	8488.9350	1.96482	8504.2979
11/16	1.96406	8474.5449	1.96445	8489.8948	1.96484	8505.2585
¾	1.96408	8475.5039	1.96448	8490.8546	1.96487	8506.2192
13/16	1.96411	8476.4629	1.96450	8491.8145	1.96489	8507.1799
⅞	1.96413	8477.4220	1.96452	8492.7744	1.96492	8508.1407
15/16	1.96416	8478.3811	1.96455	8493.7344	1.96494	8509.1016

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.96497	8510.0625	1.96536	8525.4444	1.96575	8540.8403
1/16	1.96499	8511.0235	1.96538	8526.4063	1.96577	8541.8030
⅛	1.96502	8511.9845	1.96541	8527.3682	1.96580	8542.7657
3/16	1.96504	8512.9456	1.96543	8528.3301	1.96582	8543.7285
¼	1.96506	8513.9067	1.96546	8529.2921	1.96585	8544.6914
5/16	1.96509	8514.8679	1.96548	8530.2542	1.96587	8545.6543
⅜	1.96511	8515.8291	1.96551	8531.2163	1.96590	8546.6173
7/16	1.96514	8516.7904	1.96553	8532.1784	1.96592	8547.5803
½	1.96516	8517.7517	1.96555	8533.1406	1.96595	8548.5434
9/16	1.96519	8518.7131	1.96558	8534.1029	1.96597	8549.5065
⅝	1.96521	8519.6746	1.96560	8535.0652	1.96599	8550.4697
11/16	1.96524	8520.6361	1.96563	8536.0276	1.96602	8551.4330
¾	1.96526	8521.5977	1.96565	8536.9900	1.96604	8552.3963
13/16	1.96529	8522.5593	1.96568	8537.9525	1.96607	8553.3596
⅞	1.96531	8523.5209	1.96570	8538.9150	1.96609	8554.3230
15/16	1.96533	8524.4827	1.96573	8539.8776	1.96612	8555.2865

92′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.96614	8556.2500	1.96653	8571.6736	1.96692	8587.1111
1/16	1.96617	8557.2136	1.96656	8572.6380	1.96695	8588.0764
1/8	1.96619	8558.1772	1.96658	8573.6025	1.96697	8589.0418
3/16	1.96622	8559.1409	1.96661	8574.5671	1.96700	8590.0072
1/4	1.96624	8560.1046	1.96663	8575.5317	1.96702	8590.9727
5/16	1.96626	8561.0684	1.96665	8576.4963	1.96705	8591.9382
3/8	1.96629	8562.0322	1.96668	8577.4610	1.96707	8592.9038
7/16	1.96631	8562.9961	1.96670	8578.4258	1.96709	8593.8694
1/2	1.96634	8563.9601	1.96673	8579.3906	1.96712	8594.8351
9/16	1.96636	8564.9241	1.96675	8580.3555	1.96714	8595.8008
5/8	1.96639	8565.8881	1.96678	8581.3204	1.96717	8596.7666
11/16	1.96641	8566.8522	1.96680	8582.2854	1.96719	8597.7324
3/4	1.96644	8567.8164	1.96683	8583.2504	1.96722	8598.6984
13/16	1.96646	8568.7806	1.96685	8584.2155	1.96724	8599.6643
7/8	1.96648	8569.7449	1.96687	8585.1807	1.96727	8600.6303
15/16	1.96651	8570.7092	1.96690	8586.1459	1.96729	8601.5964

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.96731	8602.5625	1.96770	8618.0278	1.96809	8633.5069
1/16	1.96734	8603.5287	1.96773	8618.9948	1.96812	8634.4749
1/8	1.96736	8604.4949	1.96775	8619.9619	1.96814	8635.4428
3/16	1.96739	8605.4612	1.96778	8620.9291	1.96817	8636.4108
1/4	1.96741	8606.4275	1.96780	8621.8963	1.96819	8637.3789
5/16	1.96744	8607.3939	1.96783	8622.8635	1.96822	8638.3470
3/8	1.96746	8608.3604	1.96785	8623.8308	1.96824	8639.3152
7/16	1.96748	8609.3269	1.96787	8624.7982	1.96826	8640.2834
1/2	1.96751	8610.2934	1.96790	8625.7656	1.96829	8641.2517
9/16	1.96753	8611.2600	1.96792	8626.7331	1.96831	8642.2201
5/8	1.96756	8612.2267	1.96795	8627.7006	1.96834	8643.1885
11/16	1.96758	8613.1934	1.96797	8628.6682	1.96836	8644.1569
3/4	1.96761	8614.1602	1.96800	8629.6359	1.96839	8645.1254
13/16	1.96763	8615.1270	1.96802	8630.6035	1.96841	8646.0940
7/8	1.96766	8616.0939	1.96804	8631.5713	1.96843	8647.0626
15/16	1.96768	8617.0608	1.96807	8632.5391	1.96846	8648.0313

93′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.96848	8649.0000	1.96887	8664.5069	1.96926	8680.0278
1/16	1.96851	8649.9688	1.96890	8665.4766	1.96928	8680.9983
1/8	1.96853	8650.9376	1.96892	8666.4463	1.96931	8681.9689
3/16	1.96856	8651.9065	1.96894	8667.4160	1.96933	8682.9395
1/4	1.96858	8652.8754	1.96897	8668.3859	1.96936	8683.9102
5/16	1.96860	8653.8444	1.96899	8669.3557	1.96938	8684.8809
3/8	1.96863	8654.8135	1.96902	8670.3256	1.96941	8685.8517
7/16	1.96865	8655.7826	1.96904	8671.2956	1.96943	8686.8225
1/2	1.96868	8656.7517	1.96907	8672.2656	1.96945	8687.7934
9/16	1.96870	8657.7209	1.96909	8673.2357	1.96948	8688.7644
5/8	1.96873	8658.6902	1.96911	8674.2058	1.96950	8689.7354
11/16	1.96875	8659.6595	1.96914	8675.1760	1.96953	8690.7064
3/4	1.96877	8660.6289	1.96916	8676.1463	1.96955	8691.6775
13/16	1.96880	8661.5983	1.96919	8677.1166	1.96958	8692.6487
7/8	1.96882	8662.5678	1.96921	8678.0869	1.96960	8693.6199
15/16	1.96885	8663.5374	1.96924	8679.0573	1.96962	8694.5912

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.96964	8695.5625	1.97004	8711.1111	1.97042	8726.6736
1/16	1.96967	8696.5339	1.97006	8712.0834	1.97045	8727.6467
1/8	1.96970	8697.5053	1.97009	8713.0557	1.97047	8728.6199
3/16	1.96972	8698.4768	1.97011	8714.0280	1.97050	8729.5931
1/4	1.96975	8699.4484	1.97013	8715.0004	1.97052	8730.5664
5/16	1.96977	8700.4199	1.97016	8715.9729	1.97055	8731.5397
3/8	1.96979	8701.3916	1.97018	8716.9454	1.97057	8732.5131
7/16	1.96982	8702.3633	1.97021	8717.9180	1.97059	8733.4866
1/2	1.96984	8703.3351	1.97023	8718.8906	1.97062	8734.4601
9/16	1.96987	8704.3069	1.97025	8719.8633	1.97064	8735.4336
5/8	1.96989	8705.2788	1.97028	8720.8360	1.97067	8736.4072
11/16	1.96992	8706.2507	1.97030	8721.8088	1.97069	8737.3809
3/4	1.96994	8707.2227	1.97033	8722.7817	1.97071	8738.3546
13/16	1.96996	8708.1947	1.97035	8723.7546	1.97074	8739.3284
7/8	1.96999	8709.1668	1.97038	8724.7275	1.97076	8740.3022
15/16	1.97001	8710.1389	1.97040	8725.7005	1.97079	8741.2761

93′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.97081	8742.2500	1.97120	8757.8403	1.97159	8773.4444
1/16	1.97084	8743.2240	1.97122	8758.8151	1.97161	8774.4202
1/8	1.97086	8744.1980	1.97125	8759.7900	1.97163	8775.3959
3/16	1.97088	8745.1721	1.97127	8760.7650	1.97166	8776.3718
1/4	1.97091	8746.1463	1.97130	8761.7400	1.97168	8777.3477
5/16	1.97093	8747.1205	1.97132	8762.7151	1.97171	8778.3236
3/8	1.97096	8748.0947	1.97134	8763.6902	1.97173	8779.2996
7/16	1.97098	8749.0690	1.97137	8764.6654	1.97175	8780.2756
1/2	1.97101	8750.0434	1.97139	8765.6406	1.97178	8781.2517
9/16	1.97103	8751.0178	1.97142	8766.6159	1.97180	8782.2279
5/8	1.97105	8751.9923	1.97144	8767.5913	1.97183	8783.2041
11/16	1.97108	8752.9668	1.97146	8768.5667	1.97185	8784.1804
3/4	1.97110	8753.9414	1.97149	8769.5421	1.97187	8785.1567
13/16	1.97113	8754.9160	1.97151	8770.5176	1.97190	8786.1331
7/8	1.97115	8755.8907	1.97154	8771.4932	1.97192	8787.1095
15/16	1.97117	8756.8655	1.97156	8772.4688	1.97195	8788.0860

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.97197	8789.0625	1.97236	8804.6944	1.97274	8820.3403
1/16	1.97200	8790.0391	1.97238	8805.6719	1.97277	8821.3186
1/8	1.97202	8791.0157	1.97241	8806.6494	1.97279	8822.2970
3/16	1.97204	8791.9924	1.97243	8807.6270	1.97281	8823.2754
1/4	1.97207	8792.9692	1.97245	8808.6046	1.97284	8824.2539
5/16	1.97209	8793.9460	1.97248	8809.5823	1.97286	8825.2324
3/8	1.97212	8794.9229	1.97250	8810.5600	1.97289	8826.2110
7/16	1.97214	8795.8998	1.97253	8811.5378	1.97291	8827.1897
1/2	1.97216	8796.8767	1.97255	8812.5156	1.97294	8828.1684
9/16	1.97219	8797.8538	1.97257	8813.4935	1.97296	8829.1472
5/8	1.97221	8798.8308	1.97260	8814.4715	1.97298	8830.1260
11/16	1.97224	8799.8080	1.97262	8815.4495	1.97301	8831.1048
3/4	1.97226	8800.7852	1.97265	8816.4275	1.97303	8832.0838
13/16	1.97228	8801.7624	1.97267	8817.4056	1.97306	8833.0627
7/8	1.97231	8802.7397	1.97269	8818.3838	1.97308	8834.0418
15/16	1.97233	8803.7170	1.97272	8819.3620	1.97310	8835.0209

94′

Fraction of an Inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.97313	8836.0000	1.97351	8851.6736	1.97390	8867.3611
1/16	1.97315	8836.9792	1.97354	8852.6537	1.97392	8868.3420
1/8	1.97318	8837.9584	1.97356	8853.6338	1.97395	8869.3230
3/16	1.97320	8838.9377	1.97358	8854.6140	1.97397	8870.3041
1/4	1.97322	8839.9171	1.97361	8855.5942	1.97399	8871.2852
5/16	1.97325	8840.8965	1.97363	8856.5745	1.97402	8872.2663
3/8	1.97327	8841.8760	1.97366	8857.5548	1.97404	8873.2475
7/16	1.97330	8842.8555	1.97368	8858.5352	1.97407	8874.2288
1/2	1.97332	8843.8351	1.97370	8859.5156	1.97409	8875.2101
9/16	1.97334	8844.8147	1.97373	8860.4961	1.97411	8876.1914
5/8	1.97337	8845.7944	1.97375	8861.4767	1.97414	8877.1729
11/16	1.97339	8846.7741	1.97378	8862.4573	1.97416	8878.1543
3/4	1.97342	8847.7539	1.97380	8863.4379	1.97419	8879.1359
13/16	1.97344	8848.7338	1.97383	8864.4186	1.97421	8880.1174
7/8	1.97346	8849.7137	1.97385	8865.3994	1.97423	8881.0991
15/16	1.97349	8850.6936	1.97387	8866.3802	1.97426	8882.0808

Fraction of an Inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.97428	8883.0625	1.97467	8898.7778	1.97505	8914.5069
1/16	1.97431	8884.0443	1.97469	8899.7604	1.97507	8915.4905
1/8	1.97433	8885.0262	1.97471	8900.7432	1.97510	8916.4741
3/16	1.97435	8886.0081	1.97474	8901.7259	1.97512	8917.4577
1/4	1.97438	8886.9900	1.97476	8902.7088	1.97514	8918.4414
5/16	1.97440	8887.9720	1.97479	8903.6917	1.97517	8919.4252
3/8	1.97443	8888.9541	1.97481	8904.6746	1.97519	8920.4090
7/16	1.97445	8889.9362	1.97483	8905.6576	1.97522	8921.3928
1/2	1.97447	8890.9184	1.97486	8906.6406	1.97524	8922.3767
9/16	1.97450	8891.9006	1.97488	8907.6237	1.97526	8923.3607
5/8	1.97452	8892.8829	1.97490	8908.6069	1.97529	8924.3447
11/16	1.97455	8893.8653	1.97493	8909.5901	1.97531	8925.3288
3/4	1.97457	8894.8477	1.97495	8910.5734	1.97534	8926.3129
13/16	1.97459	8895.8301	1.97498	8911.5567	1.97536	8927.2971
7/8	1.97462	8896.8126	1.97500	8912.5400	1.97538	8928.2814
15/16	1.97464	8897.7952	1.97502	8913.5235	1.97541	8929.2657

94′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.97543	8930.2500	1.97581	8946.0069	1.97620	8961.7778
1/16	1.97546	8931.2344	1.97584	8946.9922	1.97622	8962.7639
1/8	1.97548	8932.2189	1.97586	8947.9775	1.97624	8963.7501
3/16	1.97550	8933.2034	1.97589	8948.9629	1.97627	8964.7364
1/4	1.97553	8934.1879	1.97591	8949.9484	1.97629	8965.7227
5/16	1.97555	8935.1726	1.97593	8950.9338	1.97632	8966.7090
3/8	1.97558	8936.1572	1.97596	8951.9194	1.97634	8967.6954
7/16	1.97560	8937.1420	1.97598	8952.9050	1.97636	8968.6819
1/2	1.97562	8938.1267	1.97601	8953.8906	1.97639	8969.6684
9/16	1.97565	8939.1116	1.97603	8954.8763	1.97641	8970.6550
5/8	1.97567	8940.0965	1.97605	8955.8621	1.97644	8971.6416
11/16	1.97570	8941.0814	1.97608	8956.8479	1.97646	8972.6283
3/4	1.97572	8942.0664	1.97610	8957.8338	1.97648	8973.6150
13/16	1.97574	8943.0515	1.97613	8958.8197	1.97651	8974.6018
7/8	1.97577	8944.0366	1.97615	8959.8057	1.97653	8975.5887
15/16	1.97579	8945.0217	1.97617	8960.7917	1.97656	8976.5755

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.97658	8977.5625	1.97696	8993.3611	1.97734	9009.1736
1/16	1.97660	8978.5495	1.97698	8994.3490	1.97737	9010.1624
1/8	1.97663	8979.5366	1.97701	8995.3369	1.97739	9011.1512
3/16	1.97665	8980.5237	1.97703	8996.3249	1.97741	9012.1400
1/4	1.97667	8981.5109	1.97706	8997.3129	1.97744	9013.1289
5/16	1.97670	8982.4981	1.97708	8998.3010	1.97746	9014.1179
3/8	1.97672	8983.4854	1.97710	8999.2892	1.97749	9015.1069
7/16	1.97675	8984.4727	1.97713	9000.2774	1.97751	9016.0959
1/2	1.97677	8985.4601	1.97715	9001.2656	1.97753	9017.0851
9/16	1.97679	8986.4475	1.97718	9002.2539	1.97756	9018.0742
5/8	1.97682	8987.4350	1.97720	9003.2423	1.97758	9019.0635
11/16	1.97684	8988.4226	1.97722	9004.2307	1.97760	9020.0528
3/4	1.97687	8989.4102	1.97725	9005.2192	1.97763	9021.0421
13/16	1.97689	8990.3978	1.97727	9006.2077	1.97765	9022.0315
7/8	1.97691	8991.3855	1.97729	9007.1963	1.97768	9023.0209
15/16	1.97694	8992.3733	1.97732	9008.1849	1.97770	9024.0104

95′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.97772	9025.0000	1.97810	9040.8403	1.97848	9056.6944
1/16	1.97775	9025.9896	1.97813	9041.8308	1.97851	9057.6858
⅛	1.97777	9026.9793	1.97815	9042.8213	1.97853	9058.6772
3/16	1.97780	9027.9690	1.97818	9043.8119	1.97856	9059.6686
¼	1.97782	9028.9588	1.97820	9044.8025	1.97858	9060.6602
5/16	1.97784	9029.9486	1.97822	9045.7932	1.97860	9061.6517
⅜	1.97787	9030.9385	1.97825	9046.7840	1.97863	9062.6433
7/16	1.97789	9031.9384	1.97827	9047.7748	1.97865	9063.6350
½	1.97791	9032.9184	1.97829	9048.7656	1.97867	9064.6267
9/16	1.97794	9033.9084	1.97832	9049.7565	1.97870	9065.6185
⅝	1.97796	9034.8985	1.97834	9050.7475	1.97872	9066.6104
11/16	1.97799	9035.8887	1.97837	9051.7385	1.97875	9067.6022
¾	1.97801	9036.8789	1.97839	9052.7296	1.97877	9068.5942
13/16	1.97803	9037.8692	1.97841	9053.7207	1.97879	9069.5862
⅞	1.97806	9038.8595	1.97844	9054.7119	1.97882	9070.5782
15/16	1.97808	9039.8499	1.97846	9055.7032	1.97884	9071.5703

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.97886	9072.5625	1.97924	9088.4444	1.97962	9104.3403
1/16	1.97889	9073.5547	1.97927	9089.4375	1.97965	9105.3342
⅛	1.97891	9074.5470	1.97929	9090.4307	1.97967	9106.3282
3/16	1.97894	9075.5393	1.97932	9091.4239	1.97970	9107.3223
¼	1.97896	9076.5317	1.97934	9092.4171	1.97972	9108.3164
5/16	1.97898	9077.5241	1.97936	9093.4104	1.97974	9109.3106
⅜	1.97901	9078.5166	1.97939	9094.4038	1.97977	9110.3048
7/16	1.97903	9079.5091	1.97941	9095.3972	1.97979	9111.2991
½	1.97905	9080.5017	1.97943	9096.3906	1.97981	9112.2934
9/16	1.97908	9081.4944	1.97946	9097.3841	1.97984	9113.2878
⅝	1.97910	9082.4871	1.97948	9098.3777	1.97986	9114.2822
11/16	1.97913	9083.4798	1.97951	9099.3713	1.97988	9115.2767
¾	1.97915	9084.4727	1.97953	9100.3650	1.97991	9116.2713
13/16	1.97917	9085.4655	1.97955	9101.3588	1.97993	9117.2659
⅞	1.97920	9086.4584	1.97958	9102.3525	1.97996	9118.2605
15/16	1.97922	9087.4514	1.97960	9103.3464	1.97998	9119.2552

95′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.98000	9120.2500	1.98038	9136.1736	1.98076	9152.1111
1/16	1.98003	9121.2448	1.98041	9137.1693	1.98078	9153.1077
1/8	1.98005	9122.2397	1.98043	9138.1650	1.98081	9154.1043
3/16	1.98007	9123.2346	1.98045	9139.1608	1.98083	9155.1009
1/4	1.98010	9124.2296	1.98048	9140.1567	1.98086	9156.0977
5/16	1.98012	9125.2246	1.98050	9141.1526	1.98088	9157.0944
3/8	1.98015	9126.2197	1.98052	9142.1485	1.98090	9158.0913
7/16	1.98017	9127.2149	1.98055	9143.1446	1.98093	9159.0881
1/2	1.98019	9128.2101	1.98057	9144.1406	1.98095	9160.0851
9/16	1.98022	9129.2053	1.98060	9145.1367	1.98097	9161.0821
5/8	1.98024	9130.2006	1.98062	9146.1329	1.98100	9162.0791
11/16	1.98026	9131.1960	1.98064	9147.1292	1 98102	9163.0762
3/4	1.98029	9132.1914	1.98067	9148.1254	1.98104	9164.0734
13/16	1.98031	9133.1869	1.98069	9149.1218	1.98107	9165.0706
7/8	1.98033	9134.1824	1.98071	9150.1182	1.98109	9166.0678
15/16	1.98036	9135.1780	1.98074	9151.1146	1.98112	9167 0651

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.98114	9168.0625	1.98152	9184.0278	1.98189	9200.0069
1/16	1.98116	9169.0599	1.98154	9185.0261	1.98192	9201.0061
1/8	1.98119	9170.0574	1.98156	9186.0244	1.98194	9202.0053
3/16	1.98121	9171.0549	1.98159	9187.0228	1.98196	9203.0046
1/4	1.98123	9172.0525	1.98161	9188.0213	1.98199	9204.0039
5/16	1.98126	9173.0502	1.98163	9189.0198	1.98201	9205.0033
3/8	1.98128	9174.0479	1.98166	9190.0183	1.98204	9206.0027
7/16	1.98130	9175.0456	1.98168	9191.0170	1.98206	9207.0022
1/2	1.98133	9176.0434	1.98171	9192.0156	1.98208	9208.0017
9/16	1.98135	9177.0413	1.98173	9193.0144	1.98211	9209.0013
5/8	1.98137	9178.0392	1.98175	9194.0131	1.98213	9210.0010
11/16	1.98140	9179.0371	1.98178	9195.0120	1.98215	9211.0007
3/4	1.98142	9180.0352	1.98180	9196.0109	1.98218	9212.0004
13/16	1.98145	9181.0332	1.98182	9197.0098	1.98220	9213.0002
7/8	1.98147	9182.0314	1.98185	9198.0088	1.98222	9214.0001
15/16	1.98149	9183.0295	1.98187	9199.0078	1.98225	9215.0000

96′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.98227	9216.0000	1.98265	9232.0069	1.98302	9248.0278
1/16	1.98229	9217.0000	1.98267	9233.0078	1.98305	9249.0295
1/8	1.98232	9218.0001	1.98270	9234.0088	1.98307	9250.0314
3/16	1.98234	9219.0002	1.98272	9235.0098	1.98310	9251.0332
1/4	1.98237	9220.0004	1.98274	9236.0109	1.98312	9252.0352
5/16	1.98239	9221.0007	1.98277	9237.0120	1.98314	9253.0371
3/8	1.98241	9222.0010	1.98279	9238.0131	1.98317	9254.0392
7/16	1.98244	9223.0013	1.98281	9239.0144	1.98319	9255.0413
1/2	1.98246	9224.0017	1.98284	9240.0156	1.98321	9256.0434
9/16	1.98248	9225.0022	1.98286	9241.0170	1.98324	9257.0456
5/8	1.98251	9226.0027	1.98288	9242.0183	1.98326	9258.0479
11/16	1.98253	9227.0033	1.98291	9243.0198	1.98328	9259.0502
3/4	1.98255	9228.0039	1.98293	9244.0213	1.98331	9260.0525
13/16	1.98258	9229.0046	1.98295	9245.0228	1.98333	9261.0549
7/8	1.98260	9230.0053	1.98298	9246.0244	1.98335	9262.0574
15/16	1.98262	9231.0061	1.98300	9247.0261	1.98338	9263.0599

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.98340	9264.0625	1.98378	9280.1111	1.98415	9296.1736
1/16	1.98342	9265.0651	1.98380	9281.1146	1.98418	9297.1780
1/8	1.98345	9266.0678	1.98382	9282.1182	1.98420	9298.1824
3/16	1.98347	9267.0706	1.98385	9283.1218	1.98422	9299.1869
1/4	1.98349	9268.0734	1.98387	9284.1254	1.98425	9300.1914
5/16	1.98352	9269.0762	1.98389	9285.1292	1.98427	9301.1960
3/8	1.98354	9270.0791	1.98392	9286.1329	1.98429	9302.2006
7/16	1.98357	9271.0821	1.98394	9287.1367	1.98432	9303.2053
1/2	1.98359	9272.0851	1.98396	9288.1406	1.98434	9304.2101
9/16	1.98361	9273.0881	1.98399	9289.1446	1.98436	9305.2149
5/8	1.98364	9274.0913	1.98401	9290.1485	1.98439	9306.2197
11/16	1.98366	9275.0944	1.98403	9291.1526	1.98441	9307.2246
3/4	1.98368	9276.0977	1.98406	9292.1567	1.98443	9308.2296
13/16	1.98371	9277.1009	1.98408	9293.1608	1.98446	9309.2346
7/8	1.98373	9278.1043	1.98411	9294.1650	1.98448	9310.2397
15/16	1.98375	9279.1077	1.98413	9295.1693	1.98450	9311.2448

96′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.98453	9312.2500	1.98490	9328.3403	1.98528	9344.4444
1/16	1.98455	9313.2552	1.98493	9329.3464	1.98530	9345.4514
1/8	1.98457	9314.2605	1.98495	9330.3525	1.98532	9346.4584
3/16	1.98460	9315.2659	1.98497	9331.3588	1.98535	9347.4655
1/4	1.98462	9316.2713	1.98500	9332.3650	1.98537	9348.4727
5/16	1.98464	9317.2767	1.98502	9333.3713	1.98539	9349.4798
3/8	1.98467	9318.2822	1.98504	9334.3777	1.98542	9350.4871
7/16	1.98469	9319.2878	1.98507	9335.3841	1.98544	9351.4944
1/2	1.98471	9320.2934	1.98509	9336.3906	1.98546	9352.5017
9/16	1.98474	9321.2991	1.98511	9337.3972	1.98549	9353.5091
5/8	1.98476	9322.3048	1.98514	9338.4038	1.98551	9354.5166
11/16	1.98479	9323.3106	1.98516	9339.4104	1.98553	9355.5241
3/4	1.98481	9324.3164	1.98518	9340.4171	1.98556	9356.5317
13/16	1.98483	9325.3223	1.98521	9341.4239	1.98558	9357.5393
7/8	1.98486	9326.3282	1.98523	9342.4307	1.98560	9358.5470
15/16	1.98488	9327.3342	1.98525	9343.4375	1.98563	9359.5547

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.98565	9360.5625	1.98602	9376.6944	1.98640	9392.8403
1/16	1.98567	9361.5703	1.98605	9377.7032	1.98642	9393.8499
1/8	1.98570	9362.5782	1.98607	9378.7119	1.98645	9394.8595
3/16	1.98572	9363.5862	1.98609	9379.7207	1.98647	9395.8692
1/4	1.98574	9364.5942	1.98612	9380.7296	1.98649	9396.8789
5/16	1.98577	9365.6022	1.98614	9381.7385	1.98652	9397.8887
3/8	1.98579	9366.6104	1.98617	9382.7475	1.98654	9398.8985
7/16	1.98581	9367.6185	1.98619	9383.7565	1.98656	9399.9084
1/2	1.98584	9368.6267	1.98621	9384.7656	1.98659	9400.9184
9/16	1.98586	9369.6350	1.98624	9385.7748	1.98661	9401.9284
5/8	1.98588	9370.6433	1.98626	9386.7840	1.98663	9402.9385
11/16	1.98591	9371.6517	1.98628	9387.7932	1.98666	9403.9486
3/4	1.98593	9372.6602	1.98631	9388.8025	1.98668	9404.9588
13/16	1.98595	9373.6686	1.98633	9389.8119	1.98670	9405.9690
7/8	1.98598	9374.6772	1.98635	9390.8213	1.98673	9406.9793
15/16	1.98600	9375.6858	1.98638	9391.8308	1.98675	9407.9896

97′

Fraction of an inch	0″ Log.	0″ Square.	1″ Log.	1″ Square.	2″ Log.	2″ Square.
0	1.98677	9409.0000	1.98714	9425.1736	1.98752	9441.3611
1/16	1.98680	9410.0104	1.98717	9426.1849	1.98754	9442.3733
1/8	1.98682	9411.0209	1.98719	9427.1963	1.98756	9443.3855
3/16	1.98684	9412.0315	1.98721	9428.2077	1.98759	9444.3978
1/4	1.98687	9413.0421	1.98724	9429.2192	1.98761	9445.4102
5/16	1.98689	9414.0528	1.98726	9430.2307	1.98763	9446.4226
3/8	1.98691	9415.0635	1.98728	9431.2423	1.98766	9447.4350
7/16	1.98693	9416.0742	1.98731	9432.2539	1.98768	9448.4475
1/2	1.98696	9417.0851	1.98733	9433.2656	1.98770	9449.4601
9/16	1.98698	9418.0959	1.98735	9434.2774	1.98773	9450.4727
5/8	1.98700	9419.1069	1.98738	9435.2892	1.98775	9451.4854
11/16	1.98703	9420.1179	1.98740	9436.3010	1.98777	9452.4981
3/4	1.98705	9421.1289	1.98742	9437.3129	1.98780	9453.5109
13/16	1.98707	9422.1400	1.98745	9438.3249	1.98782	9454.5237
7/8	1.98710	9423.1512	1.98747	9439.3369	1.98784	9455.5366
15/16	1.98712	9424.1624	1.98749	9440.3490	1.98787	9456.5495

Fraction of an inch	3″ Log.	3″ Square.	4″ Log.	4″ Square.	5″ Log.	5″ Square.
0	1.98789	9457.5625	1.98826	9473.7778	1.98863	9490.0069
1/16	1.98791	9458.5755	1.98828	9474.7917	1.98866	9491.0217
1/8	1.98794	9459.5887	1.98831	9475.8057	1.98868	9492.0366
3/16	1.98796	9460.6018	1.98833	9476.8197	1.98870	9493.0515
1/4	1.98798	9461.6150	1.98835	9477.8338	1.98873	9494.0664
5/16	1.98801	9462.6283	1.98838	9478.8479	1.98875	9495.0814
3/8	1.98803	9463.6416	1.98840	9479.8621	1.98877	9496.0965
7/16	1.98805	9464.6550	1.98842	9480.8763	1.98880	9497.1116
1/2	1.98808	9465.6684	1.98845	9481.8906	1.98882	9498.1267
9/16	1.98810	9466.6819	1.98847	9482.9050	1.98884	9499.1420
5/8	1.98812	9467.6954	1.98849	9483.9194	1.98887	9500.1572
11/16	1.98815	9468.7090	1.98852	9484.9338	1.98889	9501.1726
3/4	1.98817	9469.7227	1.98854	9485.9484	1.98891	9502.1879
13/16	1.98819	9470.7364	1.98856	9486.9629	1.98894	9503.2034
7/8	1.98822	9471.7501	1.98859	9487.9775	1.98896	9504.2189
15/16	1.98824	9472.7639	1.98861	9488.9922	1.98898	9505.2344

97′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.98900	9506.2500	1.98938	9522.5069	1.98975	9538.7778
1/16	1.98903	9507.2657	1.98940	9523.5235	1.98977	9539.7952
1/8	1.98905	9508.2814	1.98942	9524.5406	1.98979	9540.8126
3/16	1.98907	9509.2971	1.98945	9525.5567	1.98982	9541.8301
1/4	1.98910	9510.3129	1.98947	9526.5734	1.98984	9542.8477
5/16	1.98912	9511.3288	1.98949	9527.5901	1.98986	9543.8653
3/8	1.98914	9512.3447	1.98951	9528.6069	1.98989	9544.8829
7/16	1.98917	9513.3607	1.98954	9529.6237	1.98991	9545.9006
1/2	1.98919	9514.3767	1.98956	9530.6406	1.98993	9546.9184
9/16	1.98921	9515.3928	1.98958	9531.6576	1.98995	9547.9362
5/8	1.98924	9516.4090	1.98961	9532.6746	1.98998	9548.9541
11/16	1.98926	9517.4252	1.98963	9533.6917	1.99000	9549.9720
3/4	1.98928	9518.4414	1.98965	9534.7088	1.99002	9550.9900
13/16	1.98931	9519.4577	1.98968	9535.7259	1.99005	9552.0081
7/8	1.98933	9520.4741	1.98970	9536.7432	1.99007	9553.0262
15/16	1.98935	9521.4905	1.98972	9537.7604	1.99009	9554.0443

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.99012	9555.0625	1.99049	9571.3611	1.99086	9587.6736
1/16	1.99014	9556.0808	1.99051	9572.3802	1.99088	9588.6936
1/8	1.99016	9557.0991	1.99053	9573.3994	1.99090	9589.7137
3/16	1.99019	9558.1174	1.99056	9574.4186	1.99093	9590.7338
1/4	1.99021	9559.1359	1.99058	9575.4379	1.99095	9591.7539
5/16	1.99023	9560.1543	1.99060	9576.4573	1.99097	9592.7741
3/8	1.99026	9561.1729	1.99063	9577.4767	1.99100	9593.7944
7/16	1.99028	9562.1914	1.99065	9578.4961	1.99102	9594.8147
1/2	1.99030	9563.2101	1.99067	9579.5156	1.99104	9595.8351
9/16	1.99032	9564.2288	1.99069	9580.5352	1.99106	9596.8555
5/8	1.99035	9565.2475	1.99072	9581.5548	1.99109	9597.8760
11/16	1.99037	9566.2663	1.99074	9582.5745	1.99111	9598.8965
3/4	1.99039	9567.2852	1.99076	9583.5942	1.99113	9599.9171
13/16	1.99042	9568.3041	1.99079	9584.6140	1.99116	9600.9377
7/8	1.99044	9569.3230	1.99081	9585.6338	1.99118	9601.9584
15/16	1.99046	9570.3420	1.99083	9586.6537	1.99120	9602.9792

98′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.99123	9604.0000	1.99160	9620.3403	1.99196	9636.6944
¹⁄₁₆	1.99125	9605.0209	1.99162	9621.3620	1.99199	9637.7170
⅛	1.99127	9606.0418	1.99164	9622.3838	1.99201	9638.7397
³⁄₁₆	1.99130	9607.0627	1.99166	9623.4056	1.99203	9639.7624
¼	1.99132	9608.0838	1.99169	9624.4275	1.99206	9640.7852
⁵⁄₁₆	1.99134	9609.1048	1.99171	9625.4495	1.99208	9641.8080
⅜	1.99136	9610.1260	1.99173	9626.4715	1.99210	9642.8308
⁷⁄₁₆	1.99139	9611.1472	1.99176	9627.4935	1.99213	9643.8538
½	1.99141	9612.1684	1.99178	9628.5156	1.99215	9644.8767
⁹⁄₁₆	1.99143	9613.1897	1.99180	9629.5378	1.99217	9645.8998
⅝	1.99146	9614.2110	1.99183	9630.5600	1.99219	9646.9229
¹¹⁄₁₆	1.99148	9615.2324	1.99185	9631.5823	1.99222	9647.9460
¾	1.99150	9616.2539	1.99187	9632.6046	1.99224	9648.9692
¹³⁄₁₆	1.99153	9617.2754	1.99189	9633.6270	1.99226	9649.9924
⅞	1.99155	9618.2970	1.99192	9634.6494	1.99229	9651.0157
¹⁵⁄₁₆	1.99157	9619.3186	1.99194	9635.6719	1.99231	9652.0391

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.99233	9653.0625	1.99270	9669.4444	1.99307	9685.8403
¹⁄₁₆	1.99236	9654.0860	1.99272	9670.4688	1.99309	9686.8655
⅛	1.99238	9655.1095	1.99275	9671.4932	1.99311	9687.8907
³⁄₁₆	1.99240	9656.1331	1.99277	9672.5176	1.99314	9688.9160
¼	1.99242	9657.1567	1.99279	9673.5421	1.99316	9689.9414
⁵⁄₁₆	1.99245	9658.1804	1.99282	9674.5667	1.99318	9690.9668
⅜	1.99247	9659.2041	1.99284	9675.5913	1.99321	9691.9923
⁷⁄₁₆	1.99249	9660.2279	1.99286	9676.6159	1.99323	9693.0178
½	1.99252	9661.2517	1.99288	9677.6406	1.99325	9694.0434
⁹⁄₁₆	1.99254	9662.2756	1.99291	9678.6654	1.99328	9695.0690
⅝	1.99256	9663.2996	1.99293	9679.6902	1.99330	9696.0947
¹¹⁄₁₆	1.99259	9664.3236	1.99295	9680.7151	1.99332	9697.1205
¾	1.99261	9665.3477	1.99298	9681.7400	1.99334	9698.1463
¹³⁄₁₆	1.99263	9666.3718	1.99300	9682.7650	1.99337	9699.1721
⅞	1.99265	9667.3959	1.99302	9683.7900	1.99339	9700.1980
¹⁵⁄₁₆	1.99268	9668.4202	1.99305	9684.8151	1.99341	9701.2240

98′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.99344	9702.2500	1.99380	9718.6736	1.99417	9735.1111
1⁄16	1.99346	9703.2761	1.99383	9719.7005	1.99419	9736.1389
1⁄8	1.99348	9704.3022	1.99385	9720.7275	1.99422	9737.1668
3⁄16	1.99351	9705.3284	1.99387	9721.7546	1.99424	9738.1947
1⁄4	1.99353	9706.3546	1.99390	9722.7817	1.99426	9739.2227
5⁄16	1.99355	9707.3809	1.99392	9723.8088	1.99429	9740.2507
3⁄8	1.99357	9708.4072	1.99394	9724.8360	1.99431	9741.2788
7⁄16	1.99360	9709.4336	1.99396	9725.8633	1.99433	9742.3069
1⁄2	1.99362	9710.4601	1.99399	9726.8906	1.99435	9743.3351
9⁄16	1.99364	9711.4866	1.99401	9727.9180	1.99438	9744.3633
5⁄8	1.99367	9712.5131	1.99403	9728.9454	1.99440	9745.3916
11⁄16	1.99369	9713.5397	1.99406	9729.9729	1.99442	9746.4199
3⁄4	1.99371	9714.5664	1.99408	9731.0004	1.99445	9747.4484
13⁄16	1.99373	9715.5931	1.99410	9732.0280	1.99447	9748.4768
7⁄8	1.99376	9716.6199	1.99412	9733.0557	1.99449	9749.5053
15⁄16	1.99378	9717.6467	1.99415	9734.0834	1.99451	9750.5339

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.99454	9751.5625	1.99490	9768.0278	1.99527	9784.5069
1⁄16	1.99456	9752.5912	1.99493	9769.0573	1.99529	9785.5374
1⁄8	1.99458	9753.6199	1.99495	9770.0869	1.99532	9786.5678
3⁄16	1.99461	9754.6487	1.99497	9771.1166	1.99534	9787.5983
1⁄4	1.99463	9755.6775	1.99499	9772.1463	1.99536	9788.6289
5⁄16	1.99465	9756.7064	1.99502	9773.1760	1.99538	9789.6595
3⁄8	1.99467	9757.7354	1.99504	9774.2058	1.99541	9790.6902
7⁄16	1.99470	9758.7644	1.99506	9775.2357	1.99543	9791.7209
1⁄2	1.99472	9759.7934	1.99509	9776.2656	1.99545	9792.7517
9⁄16	1.99474	9760.8225	1.99511	9777.2956	1.99548	9793.7826
5⁄8	1.99477	9761.8517	1.99513	9778.3256	1.99550	9794.8135
11⁄16	1.99479	9762.8809	1.99516	9779.3557	1.99552	9795.8444
3⁄4	1.99481	9763.9102	1.99518	9780.3859	1.99554	9796.8754
13⁄16	1.99483	9764.9395	1.99520	9781.4160	1.99557	9797.9065
7⁄8	1.99486	9765.9689	1.99522	9782.4463	1.99559	9798.9376
15⁄16	1.99488	9766.9983	1.99525	9783.4766	1.99561	9799.9688

99′

Fraction of an inch	0″		1″		2″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.99564	9801.0000	1.99600	9817.5069	1.99637	9834.0278
1/16	1.99566	9802.0313	1.99602	9818.5391	1.99639	9835.0608
1/8	1.99568	9803.0626	1.99605	9819.5713	1.99641	9836.0939
3/16	1.99570	9804.0940	1.99607	9820.6035	1.99643	9837.1270
1/4	1.99573	9805.1254	1.99609	9821.6359	1.99646	9838.1602
5/16	1.99575	9806.1569	1.99611	9822.6682	1.99648	9839.1934
3/8	1.99577	9807.1885	1.99614	9823.7006	1.99650	9840.2267
7/16	1.99580	9808.2201	1.99616	9824.7331	1.99653	9841.2600
1/2	1.99582	9809.2517	1.99618	9825.7656	1.99655	9842.2934
9/16	1.99584	9810.2834	1.99621	9826.7982	1.99657	9843.3269
5/8	1.99586	9811.3152	1.99623	9827.8308	1.99659	9844.3604
11/16	1.99589	9812.3470	1.99625	9828.8635	1.99662	9845.3939
3/4	1.99591	9813.3789	1.99627	9829.8963	1.99664	9846.4275
13/16	1.99593	9814.4108	1.99630	9830.9291	1.99666	9847.4612
7/8	1.99595	9815.4428	1.99632	9831 9619	1.99668	9848.4949
15/16	1.99598	9816.4749	1 99634	9832.9948	1.99671	9849.5287

Fraction of an inch	3″		4″		5″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.99673	9850.5625	1.99710	9867.1111	1.99746	9883.6736
1/16	1.99675	9851.5964	1.99712	9868.1459	19.9748	9884.7092
1/8	1.99678	9852.6303	1.99714	9869.1807	19.9750	9885.7449
3/16	1 99680	9853.6643	1.99716	9870.2155	1.99753	9886.7806
1/4	1.99682	9854.6984	1.99719	9871.2504	1.99755	9887.8164
5/16	1.99684	9855.7324	1.99721	9872.2854	1.99757	9888.8522
3/8	1.99687	9856.7666	1.99723	9873.3204	1.99760	9889.8881
7/16	1.99689	9857.8008	1.99725	9874.3555	1.99762	9890.9241
1/2	1.99691	9858.8351	1.99728	9875.3906	1.99764	9891.9601
9/16	1.99694	9859.8694	1.99730	9876.4258	1.99766	9892.9961
5/8	1.99696	9860.9038	1.99732	9877.4610	1.99769	9894.0322
11/16	1.99698	9861.9382	1.99735	9878.4963	1.99771	9895.0684
3/4	1.99700	9862.9727	1.99737	9879.5317	1.99773	9896.1046
13/16	1.99703	9864.0072	1.99739	9880.5671	1.99775	9897.1409
7/8	1.99705	9865.0418	1.99741	9881.6025	1.99778	9898.1772
15/16	1.99707	9866.0764	1.99744	9882.6380	1.99780	9899.2136

99′

Fraction of an inch	6″		7″		8″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.99782	9900.2500	1.99819	9916.8403	1.99855	9933.4444
1/16	1.99785	9901.2865	1.99821	9917.8776	1.99857	9934.4827
1/8	1.99787	9902.3230	1.99823	9918.9150	1.99860	9935.5209
3/16	1.99789	9903.3596	1.99825	9919.9525	1.99862	9936.5593
1/4	1.99791	9904.3963	1.99828	9920.9900	1.99864	9937.5977
5/16	1.99794	9905.4330	1.99830	9922.0276	1.99866	9938.6361
3/8	1.99796	9906.4697	1.99832	9923.0652	1.99869	9939.6746
7/16	1.99798	9907.5065	1.99835	9924.1029	1.99871	9940.7131
1/2	1.99800	9908.5434	1.99837	9925.1406	1.99873	9941.7517
9/16	1.99803	9909.5803	1.99839	9926.1784	1.99875	9942.7904
5/8	1.99805	9910.6173	1.99841	9927.2163	1.99878	9943.8291
11/16	1.99807	9911.6543	1.99844	9928.2542	1.99880	9944.8679
3/4	1.99810	9912.6914	1.99846	9929.2921	1.99882	9945.9067
13/16	1.99812	9913.7285	1.99848	9930.3301	1.99884	9946.9456
7/8	1.99814	9914 7657	1.99850	9931.3682	1.99887	9947.9845
15/16	1.99816	9915.8030	1.99853	9932.4063	1.99889	9949.0235

Fraction of an inch	9″		10″		11″	
	Log.	Square.	Log.	Square.	Log.	Square.
0	1.99891	9950.0625	1.99928	9966.6944	1.99964	9983.3403
1/16	1.99894	9951.1016	1.99930	9967.7344	1.99966	9984.3811
1/8	1.99896	9952.1407	1.99932	9968.7744	1.99968	9985.4220
3/16	1.99898	9953.1799	1.99934	9969.8145	1.99971	9986.4629
1/4	1.99900	9954.2192	1.99937	9970.8546	1.99973	9987.5039
5/16	1.99903	9955.2585	1.99939	9971.8948	1.99975	9988.5449
3/8	1.99905	9956.2979	1.99941	9972.9350	1.99977	9989.5860
7/16	1.99907	9957.3373	1.99943	9973.9753	1.99980	9990.6272
1/2	1.99909	9958.3767	1.99946	9975.0156	1.99982	9991.6684
9/16	1.99912	9959.4163	1.99948	9976.0560	1.99984	9992.7097
5/8	1.99914	9960.4558	1.99950	9977.0965	1.99986	9993.7510
11/16	1.99916	9961.4955	1.99952	9978.1370	1.99989	9994.7923
3/4	1.99918	9962.5352	1.99955	9979.1775	1.99991	9995.8338
13/16	1.99921	9963.5749	1.99957	9980.2181	1.99993	9996.8752
7/8	1.99923	9964.6147	1.99959	9981.2588	1.99995	9997.9168
15/16	1.99925	9965.6545	1.99962	9982.2995	1.99998	9998.9584

64ths.	32ds, etc.	0″		1″		2″		3″	
		Log.	Square.	Log.	Square.	Log.	Square.	Log.	Squar
	0	———	.00000	8.92082	.00694	9.22185	.02778	9.39794	.0625
1		7.11464	.00000	8.92755	.00716	9.22523	.02821	9.40020	.0631
	1/32	7.41567	.00001	8.93418	.00739	9.22858	.02865	9.40244	.0638
3		7.59176	.00002	8.94071	.00761	9.23191	.02910	9.40467	.0644
	1/16	7.71670	.00003	8.94715	.00784	9.23521	.02954	9.40689	.0651
5		7.81361	.00004	8.95349	.00807	9.23849	.02999	9.40911	.0658
	3/32	7.89279	.00006	8.95974	.00831	9.24174	.03044	9.41130	.0664
7		7.95974	.00008	8.96590	.00855	9.24497	.03090	9.41349	.0671
	1/8	8.01773	.00011	8.97197	.00879	9.24818	.03136	9.41567	.0678
9		8.06888	.00014	8.97796	.00903	9.25136	.03182	9.41783	.0685
	5/32	8.11464	.00017	8.98387	.00928	9.25452	.03229	9.41999	.0691
11		8.15603	.00021	8.98970	.00954	9.25765	.03276	9.42213	.0698
	3/16	8.19382	.00024	8.99545	.00979	9.26077	.03323	9.42427	.0705
13		8.22858	.00029	9.00113	.01005	9.26386	.03371	9.42639	.0712
	7/32	8.26077	.00033	9.00673	.01031	9.26693	.03419	9.42851	.0719
15		8.29073	.00038	9.01227	.01058	9.26997	.03467	9.43061	.0726
	1/4	8.31876	.00043	9.01773	.01085	9.27300	.03516	9.43270	.0733
17		8.34509	.00049	9.02312	.01112	9.27601	.03565	9.43479	.0740
	9/32	8.36991	.00055	9.02845	.01140	9.27899	.03614	9.43686	.0747
19		8.39339	.00061	9.03372	.01168	9.28196	.03664	9.43892	.0754
	5/16	8.41567	.00068	9.03892	.01196	9.28490	.03714	9.44097	.0762
21		8.43686	.00075	9.04406	.01225	9.28783	.03764	9.44302	.0769
	11/32	8.45706	.00082	9.04914	.01254	9.29073	.03815	9.44505	.0776
23		8.47637	.00090	9.05416	.01283	9.29362	.03866	9.44708	.0783
	3/8	8.49485	.00098	9.05912	.01313	9.29648	.03917	9.44909	.0791
25		8.51258	.00106	9.06403	.01343	9.29933	.03969	9.45110	.0798
	13/32	8.52961	.00115	9.06888	.01373	9.30216	.04021	9.45310	.0805
27		8.54600	.00124	9.07368	.01404	9.30497	.04073	9.45508	.0813
	7/16	8.56180	.00133	9.07843	.01435	9.30776	.04126	9.45706	.0820
29		8.57704	.00143	9.08312	.01466	9.31054	.04179	9.45903	.0828
	15/32	8.59176	.00153	9.08777	.01498	9.31330	.04232	9.46099	.0835
31		8.60600	.00163	9.09236	.01530	9.31604	.04286	9.46294	.0843
	1/2	8.61979	.00174	9.09691	.01563	9.31876	.04340	9.46489	.0850
33		8.63315	.00185	9.10141	.01595	9.32146	.04395	9.46682	.0858
	17/32	8.64612	.00196	9.10586	.01628	9.32415	.04449	9.46875	.0866
35		8.65871	.00208	9.11027	.01662	9.32683	.04505	9.47066	.0873
	9/16	8.67094	.00220	9.11464	.01695	9.32948	.04560	9.47257	.0881
37		8.68284	.00232	9.11896	.01729	9.33212	.04616	9.47447	.0889
	19/32	8.69442	.00245	9.12324	.01764	9.33475	.04672	9.47637	.0896
39		8.70570	.00258	9.12748	.01799	9.33736	.04728	9.47825	.0904
	5/8	8.71670	.00271	9.13167	.01834	9.33995	.04785	9.48013	.0912
41		8.72742	.00285	9.13583	.01869	9.34253	.04842	9.48199	.0920
	21/32	8.73789	.00299	9.13994	.01905	9.34509	.04900	9.48385	.0928
43		8.74811	.00313	9.14402	.01941	9.34763	.04958	9.48571	.0936
	11/16	8.75809	.00328	9.14806	.01978	9.35017	.05016	9.48755	.0944
45		8.76785	.00343	9.15207	.02014	9.35268	.05074	9.48939	.0952
	23/32	8.77740	.00359	9.15603	.02051	9.35519	.05133	9.49122	.0960
47		8.78674	.00375	9.15996	.02089	9.35768	.05192	9.49304	.0968
	3/4	8.79588	.00391	9.16386	.02127	9.36015	.05252	9.49485	.0976
49		8.80483	.00407	9.16772	.02165	9.36261	.05312	9.49666	.0984
	25/32	8.81361	.00424	9.17154	.02203	9.36506	.05372	9.49845	.0992
51		8.82221	.00441	9.17534	.02242	9.36749	.05432	9.50025	.1001
	13/16	8.83064	.00458	9.17910	.02281	9.36991	.05493	9.50203	.1009
53		8.83891	.00476	9.18282	.02321	9.37232	.05554	9.50380	.1017
	27/32	8.84703	.00494	9.18652	.02361	9.37471	.05616	9.50557	.1026
55		8.85500	.00513	9.19019	.02401	9.37709	.05678	9.50734	.1034
	7/8	8.86283	.00532	9.19382	.02441	9.37946	.05740	9.50909	.1042
57		8.87051	.00551	9.19742	.02482	9.38181	.05803	9.51084	.1051
	29/32	8.87807	.00570	9.20100	.02523	9.38415	.05865	9.51258	.1059
59		8.88549	.00590	9.20454	.02565	9.38648	.05929	9.51431	.1068
	15/16	8.89279	.00610	9.20806	.02607	9.38880	.05992	9.51604	.1076
61		8.89997	.00631	9.21155	.02649	9.39110	.06056	9.51776	.1085
	31/32	8.90703	.00652	9.21501	.02692	9.39339	.06120	9.51947	.1093
63		8.91398	.00673	9.21844	.02735	9.39567	.06185	9.52118	.1102

64ths.	32ds, etc.	4″		5″		6″		7″	
		Log.	Square.	Log.	Square.	Log.	Square.	Log.	Square.
	0	**9.52288**	**.11111**	**9.61979**	**.17361**	**9.69897**	**.25000**	**9.76592**	**.34028**
1		9.52457	.11198	9.62114	.17470	9.70010	.25130	9.76689	.34180
	1/32	**9.52626**	**.11285**	**9.62249**	**.17579**	**9.70123**	**.25261**	**9.76785**	**.34332**
3		9.52794	.11373	9.62384	.17688	9.70235	.25392	9.76882	.34485
	1/16	**9.52961**	**.11461**	**9.62518**	**.17798**	**9.70347**	**.25524**	**9.76978**	**.34638**
5		9.53128	.11549	9.62652	.17908	9.70459	.25655	9.77074	.34792
	3/32	**9.53294**	**.11638**	**9.62786**	**.18018**	**9.70570**	**.25787**	**9.77169**	**.34945**
7		9.53459	.11727	9.62919	.18129	9.70682	.25920	9.77265	.35099
	1/8	**9.53624**	**.11816**	**9.63051**	**.18240**	**9.70792**	**.26053**	**9.77360**	**.35254**
9		9.53788	.11906	9.63183	.18351	9.70903	.26186	9.77456	.35409
	5/32	**9.53952**	**.11996**	**9.63315**	**.18463**	**9.71014**	**.26319**	**9.77550**	**.35564**
11		9.54115	.12086	9.63447	.18575	9.71124	.26453	9.77645	.35719
	3/16	**9.54277**	**.12177**	**9.63578**	**.18688**	**9.71233**	**.26587**	**9.77740**	**.35875**
13		9.54439	.12268	9.63708	.18800	9.71343	.26721	9.77834	.36031
	7/32	**9.54600**	**.12360**	**9.63839**	**.18913**	**9.71452**	**.26856**	**9.77928**	**.36188**
15		9.54761	.12451	9.63968	.19027	9.71561	.26991	9.78022	.36345
	1/4	**9.54921**	**.12543**	**9.64098**	**.19141**	**9.71670**	**.27127**	**9.78116**	**.36502**
17		9.55080	.12636	9.64227	.19255	9.71778	.27263	9.78209	.36659
	9/32	**9.55239**	**.12729**	**9.64356**	**.19369**	**9.71886**	**.27399**	**9.78302**	**.36817**
19		9.55397	.12822	9.64484	.19484	9.71994	.27535	9.78396	.36975
	5/16	**9.55555**	**.12915**	**9.64612**	**.19599**	**9.72102**	**.27672**	**9.78488**	**.37134**
21		9.55712	.13009	9.64739	.19715	9.72209	.27809	9.78581	.37293
	11/32	**9.55868**	**.13103**	**9.64866**	**.19830**	**9.72316**	**.27947**	**9.78674**	**.37452**
23		9.56024	.13197	9.64993	.19946	9.72423	.28084	9.78766	.37611
	3/8	**9.56180**	**.13292**	**9.65120**	**.20063**	**9.72530**	**.28223**	**9.78858**	**.37771**
25		9.56335	.13387	9.65246	.20180	9.72636	.28361	9.78950	.37931
	13/32	**9.56489**	**.13483**	**9.65371**	**.20297**	**9.72742**	**.28500**	**9.79042**	**.38092**
27		9.56643	.13578	9.65497	.20414	9.72848	.28639	9.79133	.38253
	7/16	**9.56796**	**.13675**	**9.65622**	**.20532**	**9.72954**	**.28779**	**9.79225**	**.38414**
29		9.56948	.13771	9.65746	.20650	9.73059	.28919	9.79316	.38576
	15/32	**9.57100**	**.13868**	**9.65871**	**.20769**	**9.73164**	**.29059**	**9.79407**	**.38738**
31		9.57252	.13965	9.65995	.20888	9.73269	.29199	9.79497	.38900
	1/2	**9.57403**	**.14062**	**9.66118**	**.21007**	**9.73373**	**.29340**	**9.79588**	**.39062**
33		9.57554	.14160	9.66241	.21126	9.73477	.29482	9.79678	.39225
	17/32	**9.57704**	**.14258**	**9.66364**	**.21246**	**9.73582**	**.29623**	**9.79769**	**.39389**
35		9.57853	.14357	9.66487	.21367	9.73685	.29765	9.79859	.39552
	9/16	**9.58002**	**.14456**	**9.66609**	**.21487**	**9.73789**	**.29907**	**9.79948**	**.39716**
37		9.58151	.14555	9.66731	.21608	9.73892	.30050	9.80038	.39881
	19/32	**9.58299**	**.14655**	**9.66852**	**.21729**	**9.73995**	**.30193**	**9.80128**	**.40045**
39		9.58446	.14754	9.66973	.21851	9.74098	.30336	9.80217	.40210
	5/8	**9.58593**	**.14855**	**9.67094**	**.21973**	**9.74200**	**.30480**	**9.80306**	**.40375**
1		9.58740	.14955	9.67215	.22095	9.74303	.30624	9.80395	.40541
	21/32	**9.58886**	**.15056**	**9.67335**	**.22217**	**9.74405**	**.30768**	**9.80483**	**.40707**
3		9.59031	.15157	9.67455	.22340	9.74507	.30912	9.80572	.40873
	11/16	**9.59176**	**.15259**	**9.67574**	**.22464**	**9.74608**	**.31057**	**9.80660**	**.41040**
5		9.59321	.15360	9.67693	.22587	9.74710	.31203	9.80749	.41207
	23/32	**9.59465**	**.15463**	**9.67812**	**.22711**	**9.74811**	**.31348**	**9.80837**	**.41374**
7		9.59608	.15565	9.67930	.22835	9.74912	.31494	9.80924	.41542
	3/4	**9.59751**	**.15668**	**9.68049**	**.22960**	**9.75012**	**.31641**	**9.81012**	**.41710**
9		9.59894	.15772	9.68167	.23085	9.75113	.31787	9.81100	.41878
	25/32	**9.60036**	**.15875**	**9.68284**	**.23210**	**9.75213**	**.31934**	**9.81187**	**.42047**
1		9.60178	.15979	9.68401	.23336	9.75313	.32082	9.81274	.42216
	13/16	**9.60319**	**.16083**	**9.68518**	**.23462**	**9.75413**	**.32229**	**9.81361**	**.42386**
3		9.60460	.16188	9.68635	.23588	9.75512	.32377	9.81448	.42555
	27/32	**9.60600**	**.16293**	**9.68751**	**.23715**	**9.75611**	**.32526**	**9.81534**	**.42725**
5		9.60740	.16398	9.68867	.23842	9.75710	.32674	9.81621	.42896
	7/8	**9.60879**	**.16504**	**9.68983**	**.23969**	**9.75809**	**.32823**	**9.81707**	**.43066**
7		9.61018	.16610	9.69098	.24097	9.75908	.32973	9.81793	.43237
	29/32	**9.61157**	**.16716**	**9.69213**	**.24225**	**9.76006**	**.33122**	**9.81879**	**.43409**
9		9.61295	.16823	9.69328	.24353	9.76104	.33272	9.81965	.43581
	15/16	**9.61433**	**.16930**	**9.69442**	**.24482**	**9.76202**	**.33423**	**9.82050**	**.43753**
1		9.61570	.17037	9.69556	.24611	9.76300	.33574	9.82136	.43925
	31/32	**9.61707**	**.17145**	**9.69670**	**.24740**	**9.76397**	**.33725**	**9.82221**	**.44098**
3		9.61843	.17253	9.69784	.24870	9.76495	.33876	9.82306	.44271

64ths.	32ds, etc.	8″ Log.	8″ Square.	9″ Log.	9″ Square.	10″ Log.	10″ Square.	11″ Log.	11″ Squar
	0	**9.82391**	**.44444**	**9.87506**	**.56250**	**9.92082**	**.69444**	**9.96221**	**.8402**
1		9.82476	.44618	9.87581	.56445	9.92150	.69662	9.96283	.8426
	1/32	**9.82560**	**.44792**	**9.87657**	**.56641**	**9.92217**	**.69879**	**9.96344**	**.8450**
3		9.82645	.44967	9.87732	.56837	9.92285	.70097	9.96406	.8474
	1/16	**9.82729**	**.45142**	**9.87807**	**.57034**	**9.92352**	**.70315**	**9.96467**	**.8498**
5		9.82813	.45317	9.87881	.57231	9.92420	.70534	9.96529	.8522
	3/32	**9.82897**	**.45492**	**9.87956**	**.57428**	**9.92487**	**.70753**	**9.96590**	**.8546**
7		9.82981	.45668	9.88031	.57625	9.92554	.70972	9.96651	.8570
	1/8	**9.83064**	**.45844**	**9.88105**	**.57823**	**9.92621**	**.71191**	**9.96712**	**.8594**
9		9.83148	.46021	9.88179	.58022	9.92688	.71411	9.96773	.8619
	5/32	**9.83231**	**.46198**	**9.88254**	**.58220**	**9.92755**	**.71632**	**9.96834**	**.8643**
11		9.83314	.46375	9.88328	.58419	9.92822	.71853	9.96894	.8667
	3/16	**9.83397**	**.46552**	**9.88402**	**.58618**	**9.92889**	**.72073**	**9.96955**	**.8691**
13		9.83480	.46730	9.88475	.58818	9.92955	.72294	9.97016	.8716
	7/32	**9.83562**	**.46908**	**9.88549**	**.59018**	**9.93022**	**.72516**	**9.97076**	**.8740**
15		9.83645	.47087	9.88623	.59218	9.93088	.72738	9.97137	.8764
	1/4	**9.83727**	**.47266**	**9.88696**	**.59418**	**9.93154**	**.72960**	**9.97197**	**.8789**
17		9.83809	.47445	9.88769	.59619	9.93220	.73183	9.97257	.8813
	9/32	**9.83891**	**.47624**	**9.88843**	**.59821**	**9.93286**	**.73406**	**9.97318**	**.8838**
19		9.83973	.47804	9.88916	.60022	9.93352	.73629	9.97378	.8862
	5/16	**9.84055**	**.47984**	**9.88989**	**.60224**	**9.93418**	**.73853**	**9.97438**	**.8887**
21		9.84137	.48165	9.89061	.60426	9.93484	.74077	9.97498	.8911
	11/32	**9.84218**	**.48346**	**9.89134**	**.60629**	**9.93550**	**.74301**	**9.97558**	**.8936**
23		9.84299	.48527	9.89207	.60832	9.93615	.74525	9.97617	.8960
	3/8	**9.84380**	**.48709**	**9.89279**	**.61035**	**9.93681**	**.74750**	**9.97677**	**.8985**
25		9.84461	.48891	9.89351	.61239	9.93746	.74976	9.97737	.9010
	13/32	**9.84542**	**.49073**	**9.89424**	**.61443**	**9.93811**	**.75201**	**9.97796**	**.9034**
27		9.84623	.49256	9.89496	.61647	9.93876	.75427	9.97856	.9059
	7/16	**9.84703**	**.49438**	**9.89568**	**.61852**	**9.93942**	**.75654**	**9.97915**	**.9084**
29		9.84784	.49622	9.89639	.62057	9.94006	.75880	9.97974	.9109
	15/32	**9.84864**	**.49805**	**9.89711**	**.62262**	**9.94071**	**.76107**	**9.98033**	**.9134**
31		9.84944	.49989	9.89783	.62468	9.94136	.76335	9.98093	.9159
	1/2	**9.85024**	**.50174**	**9.89854**	**.62674**	**9.94201**	**.76563**	**9.98152**	**.9184**
33		9.85104	.50358	9.89926	.62880	9.94265	.76791	9.98211	.9209
	17/32	**9.85183**	**.50543**	**9.89997**	**.63087**	**9.94330**	**.77019**	**9.98270**	**.9234**
35		9.85263	.50729	9.90068	.63294	9.94394	.77248	9.98328	.9259
	9/16	**9.85342**	**.50914**	**9.90139**	**.63501**	**9.94459**	**.77477**	**9.98387**	**.9284**
37		9.85421	.51100	9.90210	.63709	9.94523	.77706	9.98446	.9309
	19/32	**9.85500**	**.51286**	**9.90281**	**.63917**	**9.94587**	**.77936**	**9.98504**	**.9334**
39		9.85579	.51473	9.90351	.64125	9.94651	.78166	9.98563	.9359
	5/8	**9.85658**	**.51660**	**9.90422**	**.64334**	**9.94715**	**.78396**	**9.98621**	**.9384**
41		9.85736	.51848	9.90492	.64543	9.94779	.78627	9.98680	.9410
	21/32	**9.85815**	**.52035**	**9.90563**	**.64752**	**9.94842**	**.78858**	**9.98738**	**.943**
43		9.85893	.52223	9.90633	.64962	9.94906	.79090	9.98796	.946
	11/16	**9.85971**	**.52412**	**9.90703**	**.65172**	**9.94969**	**.79321**	**9.98854**	**.948**
45		9.86049	.52600	9.90773	.65382	9.95033	.79553	9.98912	.951
	23/32	**9.86127**	**.52789**	**9.90843**	**.65593**	**9.95096**	**.79786**	**9.98970**	**.953**
47		9.86205	.52979	9.90913	.65804	9.95160	.80019	9.99028	.956
	3/4	**9.86283**	**.53168**	**9.90982**	**.66016**	**9.95223**	**.80252**	**9.99086**	**.958**
49		9.86360	.53358	9.91052	.66227	9.95286	.80485	9.99143	.961
	25/32	**9.86438**	**.53549**	**9.91121**	**.66439**	**9.95349**	**.80719**	**9.99201**	**.963**
51		9.86515	.53740	9.91191	.66652	9.95412	.80953	9.99259	.966
	13/16	**9.86592**	**.53931**	**9.91260**	**.66865**	**9.95474**	**.81188**	**9.99316**	**.968**
53		9.86669	.54122	9.91329	.67078	9.95537	.81422	9.99373	.971
	27/32	**9.86746**	**.54314**	**9.91398**	**.67291**	**9.95600**	**.81658**	**9.99431**	**.974**
55		9.86822	.54506	9.91467	.67505	9.95662	.81893	9.99488	.976
	7/8	**9.86899**	**.54698**	**9.91536**	**.67719**	**9.95725**	**.82129**	**9.99545**	**.979**
57		9.86975	.54891	9.91604	.67934	9.95787	.82365	9.99602	.981
	29/32	**9.87051**	**.55084**	**9.91673**	**.68148**	**9.95849**	**.82602**	**9.99659**	**.984**
59		9.87127	.55278	9.91741	.68364	9.95912	.82838	9.99716	.987
	15/16	**9.87203**	**.55471**	**9.91810**	**.68579**	**9.95974**	**.83076**	**9.99773**	**.989**
61		9.87279	.55666	9.91878	.68795	9.96036	.83313	9.99830	.992
	31/32	**9.87355**	**.55860**	**9.91946**	**.69011**	**9.96098**	**.83551**	**9.99887**	**.994**
63		9.87431	.56055	9.92014	.69228	9.96159	.83789	9.99943	.997

64ths.	32ds, etc.	12″ Log.	12″ Square.	13″ Log.	13″ Square.	14″ Log.	14″ Square.	15″ Log.	15″ Square.
	0	.00000	1.0000	.03476	1.1736	.06695	1.3611	.09691	1.5625
1		.00057	1.0026	.03528	1.1764	.06743	1.3642	.09736	1.5658
	1/32	.00113	1.0052	.03580	1.1793	.06792	1.3672	.09781	1.5690
3		.00169	1.0078	.03633	1.1821	.06840	1.3702	.09827	1.5723
	1/16	.00226	1.0104	.03685	1.1849	.06888	1.3733	.09872	1.5755
5		.00282	1.0131	.03736	1.1878	.06936	1.3763	.09917	1.5788
	3/32	.00338	1.0157	.03788	1.1906	.06985	1.3794	.09962	1.5821
7		.00394	1.0183	.03840	1.1934	.07033	1.3825	.10007	1.5854
	1/8	.00450	1.0209	.03892	1.1963	.07081	1.3855	.10051	1.5887
9		.00506	1.0236	.03943	1.1991	.07129	1.3886	.10096	1.5919
	5/32	.00562	1.0262	.03995	1.2020	.07177	1.3917	.10141	1.5952
11		.00618	1.0289	.04047	1.2048	.07225	1.3947	.10186	1.5985
	3/16	.00673	1.0315	.04098	1.2077	.07272	1.3978	.10231	1.6018
13		.00729	1.0341	.04150	1.2106	.07320	1.4009	.10275	1.6051
	7/32	.00785	1.0368	.04201	1.2134	.07368	1.4040	.10320	1.6084
15		.00840	1.0394	.04252	1.2163	.07416	1.4071	.10364	1.6117
	1/4	.00895	1.0421	.04303	1.2192	.07463	1.4102	.10409	1.6150
17		.00951	1.0448	.04355	1.2221	.07511	1.4133	.10453	1.6183
	9/32	.01006	1.0474	.04406	1.2249	.07559	1.4163	.10498	1.6216
19		.01061	1.0501	.04457	1.2278	.07606	1.4194	.10542	1.6250
	5/16	.01116	1.0528	.04508	1.2307	.07653	1.4226	.10586	1.6283
21		.01172	1.0554	.04559	1.2336	.07701	1.4257	.10631	1.6316
	11/32	.01227	1.0581	.04610	1.2365	.07748	1.4288	.10675	1.6349
23		.01282	1.0608	.04660	1.2394	.07795	1.4319	.10719	1.6383
	3/8	.01336	1.0635	.04711	1.2423	.07843	1.4350	.10763	1.6416
25		.01391	1.0662	.04762	1.2452	.07890	1.4381	.10808	1.6449
	13/32	.01446	1.0689	.04813	1.2481	.07937	1.4413	.10852	1.6483
27		.01501	1.0715	.04863	1.2510	.07984	1.4444	.10896	1.6516
	7/16	.01555	1.0742	.04914	1.2539	.08031	1.4475	.10940	1.6550
29		.01610	1.0769	.04964	1.2569	.08078	1.4506	.10984	1.6583
	15/32	.01664	1.0797	.05015	1.2598	.08125	1.4538	.11027	1.6617
31		.01719	1.0824	.05065	1.2627	.08172	1.4569	.11071	1.6650
	1/2	.01773	1.0851	.05115	1.2656	.08219	1.4601	.11115	1.6684
33		.01827	1.0878	.05165	1.2686	.08265	1.4632	.11159	1.6718
	17/32	.01881	1.0905	.05216	1.2715	.08312	1.4664	.11203	1.6751
35		.01935	1.0932	.05266	1.2744	.08359	1.4695	.11246	1.6785
	9/16	.01989	1.0959	.05316	1.2774	.08405	1.4727	.11290	1.6819
37		.02043	1.0987	.05366	1.2803	.08452	1.4758	.11333	1.6853
	19/32	.02097	1.1014	.05416	1.2833	.08499	1.4790	.11377	1.6886
39		.02151	1.1041	.05466	1.2862	.08545	1.4822	.11420	1.6920
	5/8	.02205	1.1069	.05516	1.2892	.08591	1.4854	.11464	1.6954
41		.02259	1.1096	.05565	1.2921	.08638	1.4885	.11507	1.6988
	21/32	.02312	1.1124	.05615	1.2951	.08684	1.4917	.11551	1.7022
43		.02366	1.1151	.05665	1.2981	.08730	1.4949	.11594	1.7056
	11/16	.02419	1.1179	.05714	1.3010	.08777	1.4981	.11637	1.7090
45		.02473	1.1206	.05764	1.3040	.08823	1.5013	.11680	1.7124
	23/32	.02526	1.1234	.05813	1.3070	.08869	1.5045	.11724	1.7158
47		.02580	1.1261	.05863	1.3100	.08915	1.5077	.11767	1.7192
	3/4	.02633	1.1289	.05912	1.3129	.08961	1.5109	.11810	1.7227
49		.02686	1.1317	.05961	1.3159	.09007	1.5141	.11853	1.7261
	25/32	.02739	1.1344	.06011	1.3189	.09053	1.5173	.11896	1.7295
51		.02792	1.1372	.06060	1.3219	.09099	1.5205	.11939	1.7329
	13/16	.02845	1.1400	.06109	1.3249	.09145	1.5237	.11982	1.7364
53		.02898	1.1428	.06158	1.3279	.09191	1.5269	.12025	1.7398
	27/32	.02951	1.1456	.06207	1.3309	.09236	1.5301	.12068	1.7432
55		.03004	1.1484	.06256	1.3339	.09282	1.5333	.12110	1.7467
	7/8	.03057	1.1512	.06305	1.3369	.09328	1.5366	.12153	1.7501
57		.03109	1.1539	.06354	1.3399	.09373	1.5398	.12196	1.7536
	29/32	.03162	1.1567	.06403	1.3429	.09419	1.5430	.12239	1.7570
59		.03214	1.1595	.06452	1.3460	.09464	1.5463	.12281	1.7605
	15/16	.03267	1.1624	.06500	1.3490	.09510	1.5495	.12324	1.7639
1		.03319	1.1652	.06549	1.3520	.09555	1.5527	.12366	1.7674
	31/32	.03372	1.1680	.06598	1.3550	.09600	1.5560	.12409	1.7708
3		.03424	1.1708	.06646	1.3581	.09646	1.5592	.12451	1.7743

GRAPHIC SOLUTION OF A RI

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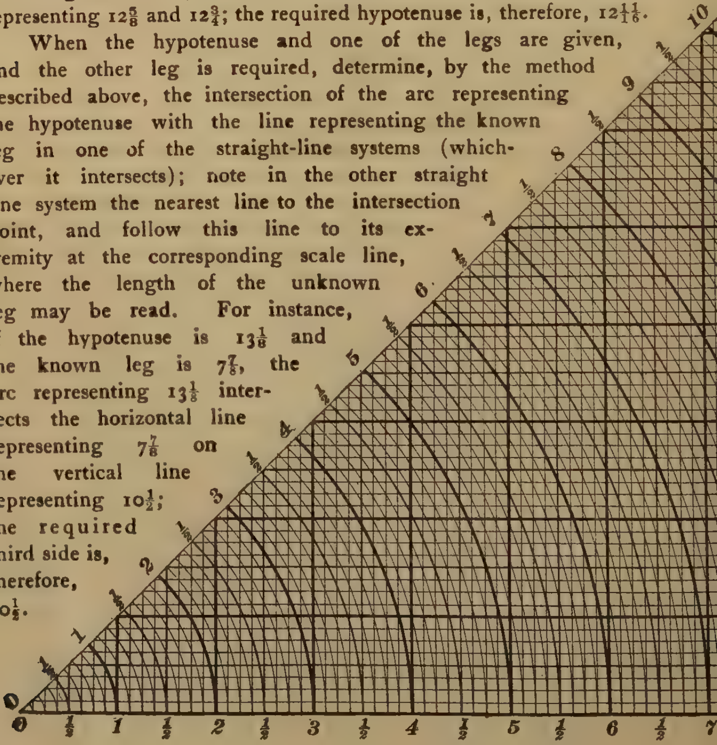
The accompanying diagram may be used as a means of solving a
three systems of lines, as shown. The circular arcs are drawn from
diagram as a center. Each of these three systems of lines represents a s
The light lines represent eighths and quarters; the medium-heavy line
heavy lines, units, as shown. The units and half units are numbered.
to the circular lines are given on the 45° line and continued along the to

To find the hypotenuse of a right triangle whose legs are know
is $9\frac{3}{4}$ and the other $8\frac{1}{8}$—place a ruler or the straight edge of a sh
alongside the vertical line representing the *larger* dimension, in thi
Then with a pencil point follow the horizontal line representing th
known dimension to its intersection with the first. Then follow the
nearest the intersection to the upper boundary of the diagram, where t
hypotenuse can be read directly to eighths and estimated to sixteenths.
In the given example the intersection is midway between the arcs
representing $12\frac{5}{8}$ and $12\frac{3}{4}$; the required hypotenuse is, therefore, $12\frac{11}{16}$.

When the hypotenuse and one of the legs are given, and the other leg is required, determine, by the method described above, the intersection of the arc representing the hypotenuse with the line representing the known leg in one of the straight-line systems (whichever it intersects); note in the other straight line system the nearest line to the intersection point, and follow this line to its extremity at the corresponding scale line, where the length of the unknown leg may be read. For instance, if the hypotenuse is $13\frac{1}{8}$ and the known leg is $7\frac{7}{8}$, the arc representing $13\frac{1}{8}$ intersects the horizontal line representing $7\frac{7}{8}$ on the vertical line representing $10\frac{1}{2}$; the required third side is, therefore, $10\frac{1}{2}$.



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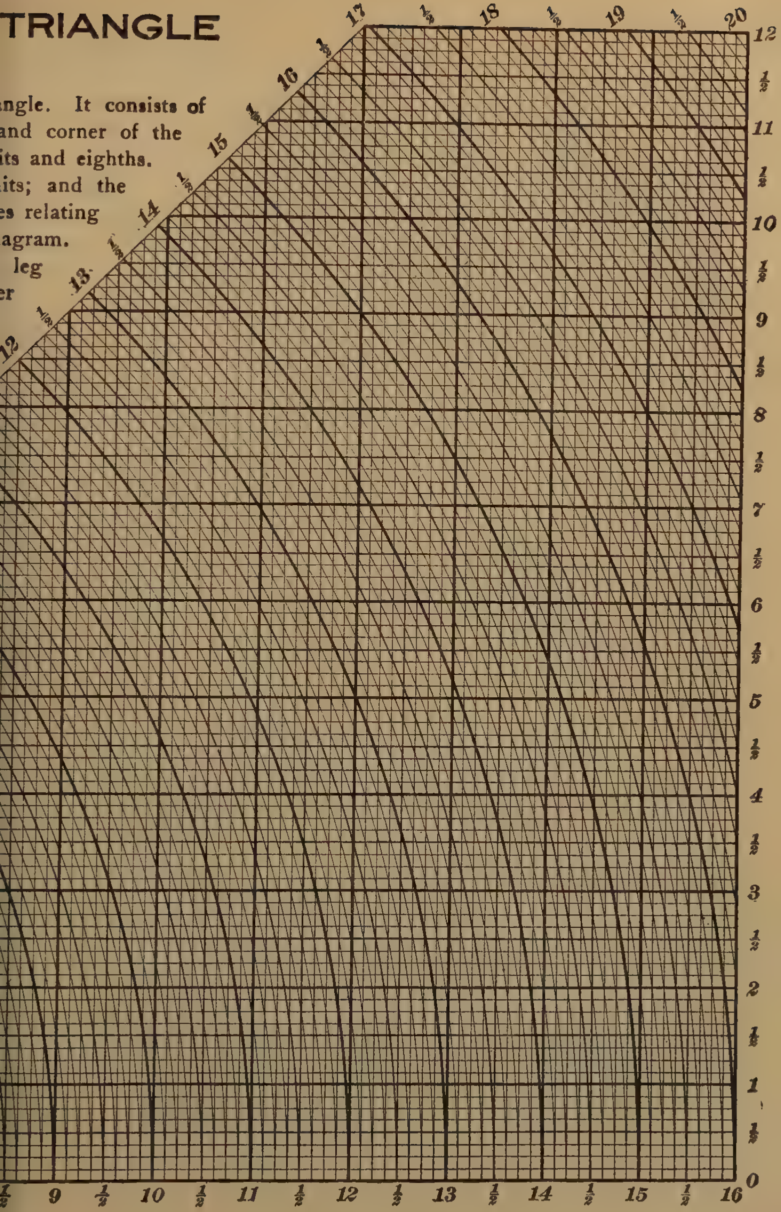

GRAPHIC SOLUTION OF A RIC

(CONTINUED)

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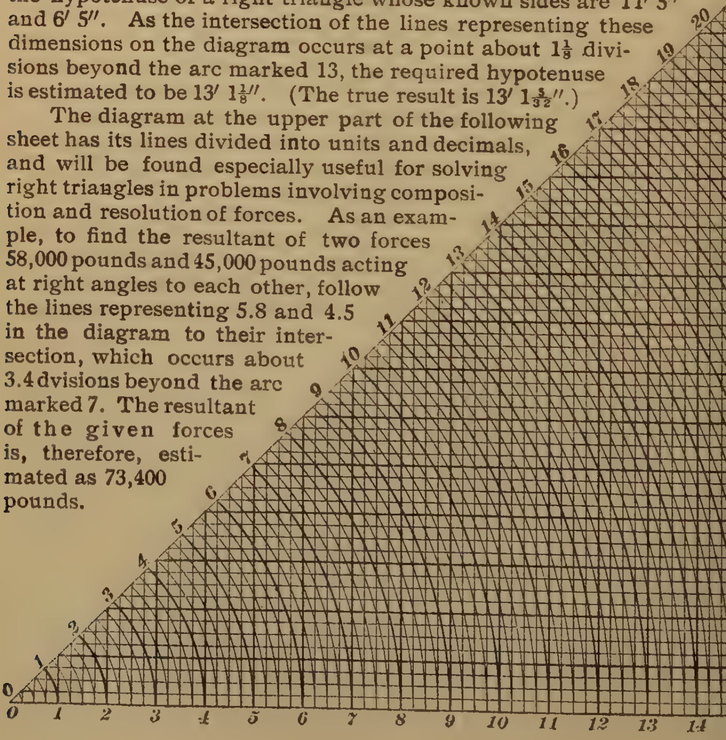
The diagrams shown on this and the following sheets are based diagram on the preceding sheet, the difference being in the grou manner in which the lines are subdivided.

The diagram shown on this sheet has a scope twice as large preceding sheet, but its lines are divided into units and quarters, tl sary to estimate eighths, as well as sixteenths. For example, to find diagram, the hypotenuse of a right triangle whose legs are 21½ the lines representing these dimensions to their intersection, whic point 2¼ divisions beyond the arc marked 27. The required hy therefore, estimated to be 27$\frac{9}{16}$.

On the following sheet, the diagram at the lower part has i divided into units and twelfths, representing feet and inches. The sco this diagram is very large, but only approximate results may be e pected; these, however, will be found sufficiently accurate in a great number of cases. As an example, let it be required to determine the hypotenuse of a right triangle whose known sides are 11′ 5″ and 6′ 5″. As the intersection of the lines representing these dimensions on the diagram occurs at a point about 1⅛ divisions beyond the arc marked 13, the required hypotenuse is estimated to be 13′ 1⅛″. (The true result is 13′ 1$\frac{5}{32}$″.)

The diagram at the upper part of the following sheet has its lines divided into units and decimals, and will be found especially useful for solving right triangles in problems involving composition and resolution of forces. As an example, to find the resultant of two forces 58,000 pounds and 45,000 pounds acting at right angles to each other, follow the lines representing 5.8 and 4.5 in the diagram to their intersection, which occurs about 3.4 dvisions beyond the arc marked 7. The resultant of the given forces is, therefore, estimated as 73,400 pounds.



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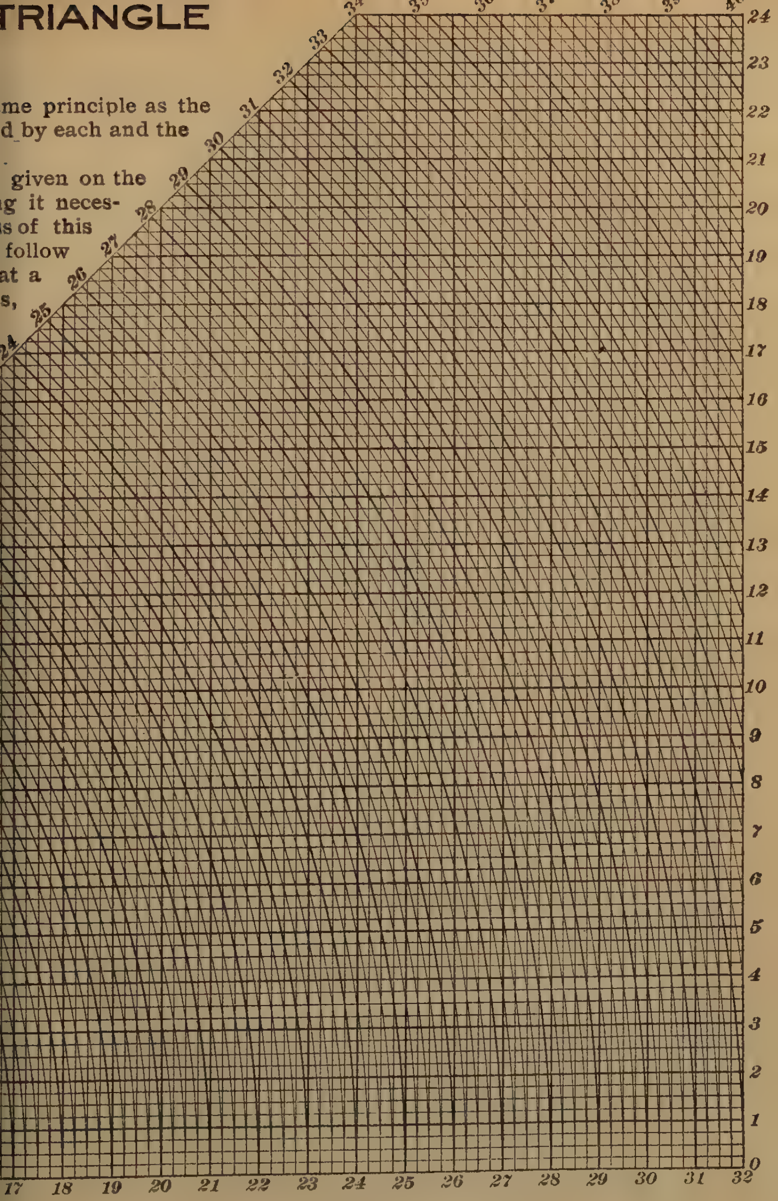

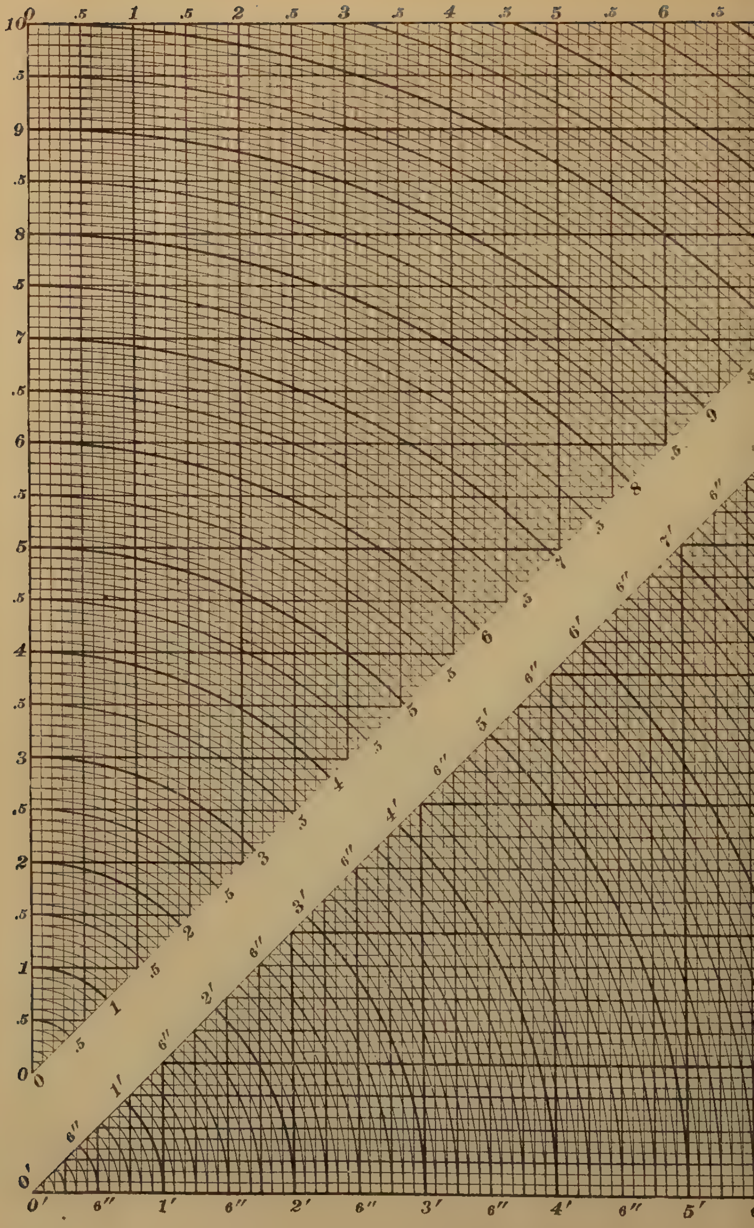
0 .5 1 .5 2 .5 3 .5 4 .5 5 .5 6 .5
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0' 6" 1' 6" 2' 6" 3' 6" 4' 6" 5' 6" 6' 6" 7' 6"
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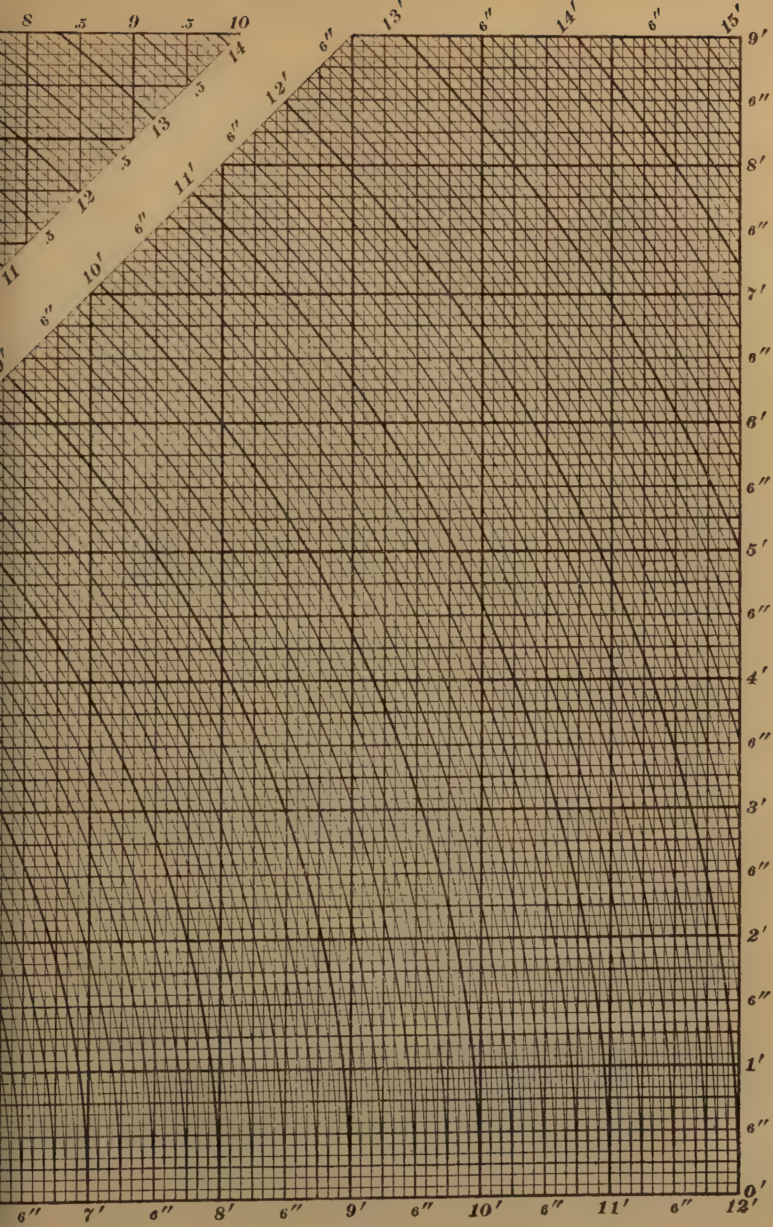
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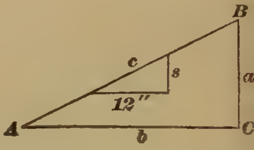
TABLES OF ANGLES AND NATURAL AND LOGARITHMIC FUNCTIONS CORRESPONDING TO BEVELS GIVEN TO TWELVE INCHES.

The following table gives the amount and the natural anc logarithmic functions of the angle whose natural tangent is the bevel, or slope, given to 12 inches. The bevels are indicated ir the table by a large figure at the top of the page, which figure is to be taken in combination with the fractions at the extreme left-hand column. Opposite the fractions are given the corresponding angles and their functions, the logarithmic functions being placec on the right-hand page and the natural functions on the left-hanc page.

For example, let, in the right triangle $A\,B\,C$ of the accompanying illustration, the slope of the hypotenuse be $4\frac{3}{8}$ inches to 1 inches. To find the angle A, refer to the pages having at the to the large figure 4″, on either page of which, opposite the fractio $\frac{3}{8}$, the corresponding angle may be read as 20° 01′ 52″; the natura functions of that angle are given on the left-hand page as sin A= 0.34253, csc A=2.91946, etc., and the logarithmic functions will b found on the right-hand page as log sin A=9.53470, log csc A= 0.46530, etc.

Conversely, when the angle A or any of its trigonometric functions or their logarithms are known, the bevel s can be read directly from the table. When the angle A is greater than 45°, the complement of A should be used. The bevel s is then parallel to $A\,C$ instead of to $B\,C$.



Example I.—It is desired.to determine the bevel s when b= 20′ 0″ and c=23′ 9″.

Solution.—In this case it is convenient to use the natural secan which is $\frac{23.75}{20}=1.1875$. Referring to the table, it is found that th corresponding bevel is $7\frac{11}{16}$.

Example II.—Let b=13′ 7¼″ and c=20′ 9½″. · Find s.

Solution.—In this case it is simpler to employ the logarith of either the cosine or the secant. Using the former, we have, lo cos A=log b—log c=1.13367—1.31789=9.81578. As the cosine d creases with the increase of the angle and log cos 45°=9.84949, is greater than 45°, and s must be taken parallel to $A\,C$. It is ev dent that the bevel is then the natural tangent of B. As cos A sin (90—A)=sin B, the value 9.81578 just derived becomes log s B and the corresponding bevel will be found in the table as $10\frac{5}{8}$″.

When one of the sides of the right triangle $A\,B\,C$ and the slo of the hypotenuse are given, the other two sides may be determin by means of the following formulas, using either the natural or the logarithmic functions, whichever is more convenient to apply for the given case:

$$b = c \cos A = a \cot A \quad (1)$$

$$a = b \tan A = c \sin A \quad (2)$$

$$c = b \sec A = a \csc A \quad (3)$$

Hence, $\log b = \log c + \log \cos A = \log a + \log \cot A \quad (4)$

$$\log a = \log b + \log \tan A = \log c + \log \sin A \quad (5)$$

$$\log c = \log b + \log \sec A = \log a + \log \csc A \quad (6)$$

EXAMPLE I.—Let in the accompanying illustration, $AC = 20$ inches and the bevel $s = 10\frac{7}{16}$ inches to 12 inches. Find BC and AB.

SOLUTION.—In this case it will be more convenient to use natural functions. Applying formulas 2 and 3 and substituting for b the value of 20, and for tan A and sec A the proper values taken from the table, it will be found that

$$a = 20 \times .86979 = 17.3958 = 17\tfrac{11}{32} \text{ in.}$$

and

$$c = 20 \times 1.32534 = 26.5068 = 26\tfrac{1}{2} \text{ in.}$$

EXAMPLE II.—Let $AC = 26'\ 7\frac{3}{4}''$ and $s = 4\frac{3}{8}$ inches to 12 inches. Required, a and c.

SOLUTION.—In this case it will be simpler to use logarithmic functions. Applying formulas 5 and 6 and substituting the proper values, it will be found that

$$\log a = 1.42563 + 9.56180 = 0.98743 = \log 9'\ 8\tfrac{9}{16}''$$

and

$$\log c = 1.42563 + 0.02710 = 1.45273 = \log 28'\ 4\tfrac{11}{32}''$$

The parallel arrangement of the Tables of Logarithms and Squares may here be taken advantage of for checking the values of a and c. Thus, when taking from the table the logarithm of b, take at the same time its square, which in our case is 710.0004. Similarly, take the squares of a and c when obtaining their values from the table by their logarithms. In our example these squares are, respectively, $a^2 = 94.3529$ and $c^2 = 804.4019$. Then, the relation $a^2 + b^2 = c^2$ will show whether a and c were determined correctly.

In our example,

$$\begin{aligned} a^2 &= 94.3529 \\ b^2 &= 710.0004 \\ \hline c^2 &= 804.3533 = (28'\ 4\tfrac{11}{32}'')^2 \text{ nearly} \end{aligned}$$

0"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.00000	+∞	0.00000	+∞	1.00000	1.00000	0	0	0
1/32	0.00260	384.0012	0.00260	384.0000	1.00000	1.00000	0	08	57
1/16	0.00521	192.0026	0.00521	192.0000	0.99999	1.00001	0	17	54
3/32	0.00781	128.0040	0.00781	128.0000	0.99997	1.00003	0	26	51
1/8	0.01042	96.0052	0.01042	96.0000	0.99995	1.00005	0	35	49
5/32	0.01302	76.8065	0.01302	76.8000	0.99992	1.00008	0	44	46
3/16	0.01562	64.0078	0.01563	64.0000	0.99988	1.00012	0	53	43
7/32	0.01823	54.8663	0.01823	54.8571	0.99983	1.00017	1	02	40
1/4	0.02083	48.0104	0.02083	48.0000	0.99978	1.00022	1	11	37
9/32	0.02343	42.6783	0.02344	42.6667	0.99973	1.00027	1	20	33
5/16	0.02603	38.4130	0.02604	38.4000	0.99966	1.00034	1	29	30
11/32	0.02863	34.9234	0.02865	34.9091	0.99959	1.00041	1	38	27
3/8	0.03123	32.0156	0.03125	32.0000	0.99951	1.00049	1	47	24
13/32	0.03383	29.5554	0.03385	29.5385	0.99943	1.00057	1	56	20
7/16	0.03643	27.4468	0.03646	27.4286	0.99934	1.00066	2	05	17
15/32	0.03903	25.6195	0.03906	25.6000	0.99924	1.00076	2	14	13
1/2	0.04163	24.0208	0.04167	24.0000	0.99913	1.00087	2	23	09
17/32	0.04423	22.6103	0.04427	22.5882	0.99902	1.00098	2	32	06
9/16	0.04682	21.3568	0.04688	21.3333	0.99890	1.00110	2	41	02
19/32	0.04942	20.2352	0.04948	20.2105	0.99878	1.00122	2	49	57
5/8	0.05201	19.2260	0.05208	19.2000	0.99865	1.00136	2	58	53
21/32	0.05461	18.3130	0.05469	18.2857	0.99851	1.00149	3	07	49
11/16	0.05720	17.4430	0.05729	17.4545	0.99836	1.00164	3	16	44
23/32	0.05979	16.7256	0.05990	16.6957	0.99821	1.00179	3	25	40
3/4	0.06238	16.0312	0.06250	16.0000	0.99805	1.00195	3	34	35
25/32	0.06497	15.3925	0.06510	15.3600	0.99789	1.00212	3	43	30
13/16	0.06755	14.8031	0.06771	14.7692	0.99772	1.00229	3	52	25
27/32	0.07014	14.2573	0.07031	14.2222	0.99754	1.00247	4	01	19
7/8	0.07272	13.7507	0.07292	13.7143	0.99735	1.00266	4	10	14
29/32	0.07531	13.2791	0.07552	13.2414	0.99716	1.00285	4	19	08
15/16	0.07789	12.8390	0.07813	12.8000	0.99696	1.00305	4	28	02
31/32	0.08047	12.4274	0.08073	12.3871	0.99676	1.00325	4	36	56
1	0.08305	12.0416	0.08333	12.0000	0.99655	1.00347	4	45	49

0″

Fraction of an Inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	−∞	+∞	−∞	+∞	0.00000	0.00000	0	0	0
1/32	7.41567	2.58433	7.41567	2.58433	0.00000	0.00000	0	08	57
1/16	7.71669	2.28331	7.71670	2.28330	9.99999	0.00001	0	17	54
3/32	7.89278	2.10722	7.89279	2.10721	9.99999	0.00001	0	26	51
1/8	8.01771	1.98229	8.01773	1.98227	9.99998	0.00002	0	35	49
5/32	8.11460	1.88540	8.11464	1.88536	9.99996	0.00004	0	44	46
3/16	8.19377	1.80623	8.19382	1.80618	9.99995	0.00005	0	53	43
7/32	8.26069	1.73931	8.26077	1.73923	9.99993	0.00007	1	02	40
1/4	8.31866	1.68134	8.31876	1.68124	9.99991	0.00009	1	11	37
9/32	8.36979	1.63021	8.36991	1.63009	9.99988	0.00012	1	20	33
5/16	8.41552	1.58448	8.41567	1.58433	9.99985	0.00015	1	29	30
11/32	8.45688	1.54312	8.45706	1.54294	9.99982	0.00018	1	38	27
3/8	8.49464	1.50536	8.49485	1.50515	9.99979	0.00021	1	47	24
13/32	8.52936	1.47064	8.52961	1.47039	9.99975	0.00025	1	56	20
7/16	8.56151	1.43849	8.56180	1.43820	9.99971	0.00029	2	05	17
15/32	8.59143	1.40857	8.59176	1.40824	9.99967	0.00033	2	14	13
1/2	8.61941	1.38059	8.61979	1.38021	9.99962	0.00038	2	23	09
17/32	8.64569	1.35431	8.64612	1.35388	9.99957	0.00043	2	32	06
9/16	8.67046	1.32954	8.67094	1.32906	9.99952	0.00048	2	41	02
19/32	8.69389	1.30611	8.69442	1.30558	9.99947	0.00053	2	49	57
5/8	8.71611	1.28389	8.71670	1.28330	9.99941	0.00059	2	58	53
21/32	8.73724	1.26276	8.73789	1.26211	9.99935	0.00065	3	07	49
11/16	8.75738	1.24262	8.75809	1.24191	9.99929	0.00071	3	16	44
23/32	8.77662	1.22338	8.77740	1.22260	9.99922	0.00078	3	25	40
3/4	8.79503	1.20497	8.79588	1.20412	9.99915	0.00085	3	34	35
25/32	8.81269	1.18731	8.81361	1.18639	9.99908	0.00092	3	43	30
13/16	8.82965	1.17035	8.83064	1.16936	9.99901	0.00099	3	52	25
27/32	8.84596	1.15404	8.84703	1.15297	9.99893	0.00107	4	01	19
7/8	8.86168	1.13832	8.86283	1.13717	9.99885	0.00115	4	10	14
29/32	8.87683	1.12317	8.87807	1.12193	9.99876	0.00124	4	19	08
15/16	8.89147	1.10853	8.89279	1.10721	9.99868	0.00132	4	28	02
31/32	8.90562	1.09438	8.90703	1.09297	9.99859	0.00141	4	36	56
1	8.91932	1.08068	8.92082	1.07918	9.99850	0.00150	4	45	49

1"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.08305	12.0416	0.08333	12.0000	0.99655	1.00008	4	45	49
1/32	0.08562	11.6793	0.08594	11.6364	0.99633	1.00369	4	54	42
1/16	0.08820	11.3383	0.08854	11.2941	0.99610	1.00391	5	03	36
3/32	0.09077	11.0169	0.09115	10.9714	0.99587	1.00415	5	12	28
1/8	0.09334	10.7134	0.09375	10.6667	0.99563	1.00438	5	21	21
5/32	0.09591	10.4264	0.09635	10.3784	0.99539	1.00463	5	30	13
3/16	0.09848	10.1546	0.09896	10.1053	0.99514	1.00488	5	39	05
7/32	0.10104	9.89680	0.10156	9.84615	0.99488	1.00514	5	47	57
1/4	0.10361	9.65194	0.10417	9.60000	0.99462	1.00541	5	56	49
9/32	0.10617	9.41908	0.10677	9.36585	0.99435	1.00568	6	05	40
5/16	0.10873	9.19738	0.10938	9.14286	0.99407	1.00596	6	14	31
11/32	0.11128	8.89605	0.11198	8.93023	0.99379	1.00625	6	23	22
3/8	0.11384	8.78437	0.11458	8.72727	0.99350	1.00654	6	32	12
13/32	0.11639	8.59172	0.11719	8.53333	0.99320	1.00684	6	41	02
7/16	0.11894	8.40751	0.11979	8.34783	0.99290	1.00715	6	49	52
15/32	0.12149	8.23119	0.12240	8.17021	0.99259	1.00746	6	58	41
1/2	0.12403	8.06226	0.12500	8.00000	0.99228	1.00778	7	07	30
17/32	0.12658	7.90028	0.12760	7.83673	0.99196	1.00811	7	16	19
9/16	0.12912	7.74483	0.13021	7.68000	0.99163	1.00844	7	25	07
19/32	0.13166	7.59552	0.13281	7.52941	0.99130	1.00878	7	33	55
5/8	0.13419	7.45202	0.13542	7.38462	0.99096	1.00913	7	42	43
21/32	0.13672	7.31396	0.13802	7.24528	0.99061	1.00948	7	51	30
11/16	0.13925	7.18108	0.14063	7.11111	0.99026	1.00984	8	00	17
23/32	0.14178	7.05307	0.14323	6.98182	0.98990	1.01021	8	09	04
3/4	0.14431	6.92967	0.14583	6.85714	0.98953	1.01058	8	17	50
25/32	0.14683	6.81065	0.14844	6.73684	0.98916	1.01096	8	26	35
13/16	0.14935	6.69579	0.15104	6.62069	0.98878	1.01134	8	35	21
27/32	0.15186	6.58485	0.15365	6.50847	0.98840	1.01173	8	44	06
7/8	0.15438	6.47766	0.15625	6.40000	0.98801	1.01213	8	52	50
29/32	0.15689	6.37401	0.15885	6.29508	0.98762	1.01254	9	01	35
15/16	0.15939	6.27376	0.16146	6.19355	0.98722	1.01295	9	10	18
31/32	0.16190	6.17673	0.16406	6.09524	0.98681	1.01337	9	19	02
1	0.16440	6.08276	0.16667	6.00000	0.98639	1.01379	9	27	44

1″

Fraction of an inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	8.91932	1.08068	8.92082	1.07918	9.99850	0.00150	4	45	49
1⁄32	8.93258	1.06742	8.93418	1.06582	9.99840	0.00160	4	54	42
1⁄16	8.94545	1.05455	8.94715	1.05285	9.99830	0.00170	5	03	36
3⁄32	8.95794	1.04206	8.95974	1.04026	9.99820	0.00180	5	12	28
⅛	8.97007	1.02993	8.97197	1.02803	9.99810	0.00190	5	21	21
5⁄32	8.98186	1.01814	8.98387	1.01613	9.99799	0.00201	5	30	13
3⁄16	8.99334	1.00666	8.99545	1.00455	9.99788	0.00212	5	39	05
7⁄32	9.00450	0.99550	9.00673	0.99327	9.99777	0.00223	5	47	57
¼	9.01539	0.98461	9.01773	0.98227	9.99766	0.00234	5	56	49
9⁄32	9.02599	0.97401	9.02845	0.97155	9.99754	0.00246	6	05	40
5⁄16	9.03634	0.96366	9.03892	0.96108	9.99742	0.00258	6	14	31
11⁄32	9.04643	0.95357	9.04914	0.95086	9.99729	0.00271	6	23	22
⅜	9.05629	0.94371	9.05912	0.94088	9.99717	0.00283	6	32	12
13⁄32	9.06592	0.93408	9.06888	0.93112	9.99704	0.00296	6	41	02
7⁄16	9.07533	0.92467	9.07843	0.92157	9.99691	0.00309	6	49	52
15⁄32	9.08454	0.91546	9.08777	0.91223	9.99677	0.00323	6	58	41
½	9.09354	0.90646	9.09691	0.90309	9.99663	0.00337	7	07	30
17⁄32	9.10236	0.89764	9.10586	0.89414	9.99649	0.00351	7	16	19
9⁄16	9.11099	0.88901	9.11464	0.88536	9.99635	0.00365	7	25	07
19⁄32	9.11944	0.88056	9.12324	0.87676	9.99620	0.00380	7	33	55
⅝	9.12773	0.87227	9.13167	0.86833	9.99605	0.00395	7	42	43
21⁄32	9.13585	0.86415	9.13994	0.86006	9.99590	0.00410	7	51	30
11⁄16	9.14381	0.85619	9.14806	0.85194	9.99575	0.00425	8	00	17
23⁄32	9.15162	0.84838	9.15603	0.84397	9.99559	0.00441	8	09	04
¾	9.15929	0.84071	9.16386	0.83614	9.99543	0.00457	8	17	50
25⁄32	9.16681	0.83319	9.17154	0.82846	9.99527	0.00473	8	26	35
13⁄16	9.17420	0.82580	9.17910	0.82090	9.99510	0.00490	8	35	21
27⁄32	9.18145	0.81855	9.18652	0.81348	9.99493	0.00507	8	44	06
⅞	9.18858	0.81142	9.19382	0.80618	9.99476	0.00524	8	52	50
29⁄32	9.19559	0.80441	9.20100	0.79900	9.99459	0.00541	9	01	35
15⁄16	9.20247	0.79753	9.20806	0.79194	9.99441	0.00559	9	10	18
31⁄32	9.20924	0.79076	9.21501	0.78499	9.99423	0.00577	9	19	02
1	9.21590	0.78410	9.22185	0.77815	9.99405	0.00595	9	27	44

2"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.16440	6.08276	0.16667	6.00000	0.98639	1.01379	9	27	44
1/32	0.16690	5.99173	0.16927	5.90769	0.98597	1.01423	9	36	27
1/16	0.16939	5.90350	0.17188	5.81818	0.98555	1.01466	9	45	09
3/32	0.17188	5.81793	0.17448	5.73134	0.98512	1.01511	9	53	50
1/8	0.17437	5.73492	0.17708	5.64706	0.98468	1.01556	10	02	31
5/32	0.17686	5.65435	0.17969	5.56522	0.98424	1.01602	10	11	12
3/16	0.17934	5.57611	0.18229	5.48571	0.98379	1.01648	10	19	52
7/32	0.18181	5.50012	0.18490	5.40845	0.98333	1.01695	10	28	32
1/4	0.18429	5.42627	0.18750	5.33333	0.98287	1.01743	10	37	11
9/32	0.18676	5.35448	0.19010	5.26027	0.98241	1.01791	10	45	49
5/16	0.18923	5.28467	0.19271	5.18919	0.98193	1.01840	10	54	28
11/32	0.19169	5.21674	0.19531	5.12000	0.98146	1.01890	11	03	05
3/8	0.19415	5.15064	0.19792	5.05263	0.98097	1.01940	11	11	42
13/32	0.19661	5.08628	0.20052	4.98701	0.98048	1.01991	11	20	19
7/16	0.19906	5.02361	0.20313	4.92308	0.97999	1.02042	11	28	55
15/32	0.20151	4.96256	0.20573	4.86076	0.97949	1.02094	11	37	31
1/2	0.20395	4.90306	0.20833	4.80000	0.97898	1.02147	11	46	06
17/32	0.20640	4.84506	0.21094	4.74074	0.97847	1.02201	11	54	40
9/16	0.20883	4.78850	0.21354	4.68293	0.97795	1.02255	12	03	14
19/32	0.21127	4.73334	0.21615	4.62651	0.97743	1.02309	12	11	48
5/8	0.21370	4.67953	0.21875	4.57143	0.97690	1.02364	12	20	21
21/32	0.21612	4.62700	0.22135	4.51765	0.97637	1.02421	12	28	53
11/16	0.21854	4.57573	0.22396	4.46512	0.97583	1.02477	12	37	25
23/32	0.22096	4.52565	0.22656	4.41379	0.97528	1.02534	12	45	56
3/4	0.22338	4.47675	0.22917	4.36364	0.97473	1.02592	12	54	27
25/32	0.22579	4.42897	0.23177	4.31461	0.97418	1.02651	13	02	57
13/16	0.22819	4.38229	0.23438	4.26667	0.97362	1.02710	13	11	26
27/32	0.23059	4.33665	0.23698	4.21978	0.97305	1.02770	13	19	55
7/8	0.23299	4.29203	0.23958	4.17391	0.97248	1.02830	13	28	23
29/32	0.23538	4.24840	0.24219	4.12903	0.97190	1.02891	13	36	51
15/16	0.23777	4.20572	0.24479	4.08511	0.97132	1.02953	13	45	18
31/32	0.24016	4.16397	0.24740	4.04211	0.97073	1.03015	13	53	45
1	0.24254	4.12311	0.25000	4.00000	0.97014	1.03078	14	02	10

2″

Fraction of an Inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	9.21590	0.78410	9.22185	0.77815	9.99405	0.00595	9	27	44
1/32	9.22245	0.77755	9.22858	0.77142	9.99387	0.00613	9	36	27
1/16	9.22889	0.77111	9.23521	0.76479	9.99368	0.00632	9	45	09
3/32	9.23523	0.76477	9.24174	0.75826	9·99349	0.00651	9	53	50
1/8	9.24147	0.75853	9.24818	0.75182	9.99330	0.00670	10	02	31
5/32	9.24762	0.75238	9.25452	0.74548	9.99310	0.00690	10	11	12
3/16	9.25367	0.74633	9.26077	0.73923	9.99290	0.00710	10	19	52
7/32	9.25963	0.74037	9.26693	0.73307	9.99270	0.00730	10	28	32
1/4	9.26550	0.73450	9.27300	0.72700	9.99250	0.00750	10	37	11
9/32	9.27128	0.72872	9.27899	0.72101	9.99229	0.00771	10	45	49
5/16	9.27698	0.72302	9.28490	0.71510	9.99208	0.00792	10	54	28
11/32	9.28260	0.71740	9.29073	0.70927	9.99187	0.00813	11	03	05
3/8	9.28814	0.71186	9.29648	0.70352	9.99166	0.00834	11	11	42
13/32	9.29360	0.70640	9.30216	0.69784	9.99144	0.00856	11	20	19
7/16	9.29898	0.70102	9.30776	0.69224	9.99122	0.00878	11	28	55
15/32	9.30429	0.69571	9.31330	0.68670	9.99100	0.00900	11	37	31
1/2	9.30953	0.69047	9.31876	0.68124	9.99077	0.00923	11	46	06
17/32	9.31470	0.68530	9.32415	0.67585	9.99055	0.00945	11	54	40
9/16	9.31980	0.68020	9.32948	0.67052	9.99032	0.00968	12	03	14
19/32	9.32483	0.67517	9.33475	0.66525	9.99008	0.00992	12	11	48
5/8	9.32980	0.67020	9.33995	0.66005	9.98985	0.01015	12	20	21
21/32	9.33470	0.66530	9.34509	0.65491	9.98961	0.01039	12	28	53
11/16	9.33954	0.66046	9.35017	0.64983	9.98937	0.01063	12	37	25
23/32	9.34432	0.65568	9.35519	0.64481	9.98913	0.01087	12	45	56
3/4	9.34904	0.65096	9.36015	0.63985	9.98889	0.01111	12	54	27
25/32	9.35370	0.64630	9.36506	0.63494	9.98864	0.01136	13	02	57
13/16	9.35830	0.64170	9.36991	0.63009	9.98839	0.01161	13	11	26
27/32	9.36285	0.63715	9.37471	0.62529	9.98814	0.01186	13	19	55
7/8	9.36734	0.63266	9.37946	0.62054	9.98788	0.01212	13	28	23
29/32	9.37177	0.62823	9.38415	0.61585	9.98762	0.01238	13	36	51
15/16	9.37616	0.62384	9.38880	0.61120	9.98736	0.01264	13	45	18
31/32	9.38049	0.61951	9.39339	0.60661	9.98710	0.01290	13	53	45
1	9.38478	0.61522	9.39794	0.60206	9.98684	0.01316	14	02	16

3"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.24254	4.12311	0.25000	4.00000	0.97014	1.03078	14	02	10
1/32	0.24491	4.08311	0.25260	3.95876	0.96955	1.03141	14	10	36
1/16	0.24728	4.04396	0.25521	3.91837	0.96894	1.03205	14	19	00
3/32	0.24965	4.00562	0.25781	3.87879	0.96834	1.03270	14	27	24
1/8	0.25201	3.96807	0.26042	3.84000	0.96772	1.03335	14	35	48
5/32	0.25437	3.93129	0.26302	3.80198	0.96711	1.03401	14	44	10
3/16	0.25672	3.89525	0.26563	3.76471	0.96649	1.03468	14	52	32
7/32	0.25907	3.85994	0.26823	3.72816	0.96586	1.03535	15	00	54
1/4	0.26142	3.82533	0.27083	3.69231	0.96523	1.03603	15	09	15
9/32	0.26375	3.79140	0.27344	3.65714	0.96459	1.03671	15	17	35
5/16	0.26609	3.75813	0.27604	3.62264	0.96395	1.03740	15	25	54
11/32	0.26842	3.72550	0.27865	3.58879	0.96330	1.03810	15	34	13
3/8	0.27075	3.69350	0.28125	3.55556	0.96265	1.03880	15	42	31
13/32	0.27307	3.66211	0.28385	3.52294	0.96200	1.03951	15	50	49
7/16	0.27538	3.63131	0.28646	3.49091	0.96133	1.04022	15	59	05
15/32	0.27769	3.60109	0.28906	3.45946	0.96067	1.04094	16	07	21
1/2	0.28000	3.57143	0.29167	3.42857	0.96000	1.04167	16	15	37
17/32	0.28230	3.54231	0.29427	3.39823	0.95933	1.04240	16	23	51
9/16	0.28460	3.51372	0.29688	3.36842	0.95865	1.04314	16	32	05
19/32	0.28689	3.48566	0.29948	3.33913	0.95796	1.04388	16	40	19
5/8	0.28918	3.45809	0.30208	3.31034	0.95728	1.04463	16	48	31
21/32	0.29146	3.43101	0.30469	3.28205	0.95658	1.04539	16	56	43
11/16	0.29374	3.40442	0.30729	3.25424	0.95589	1.04615	17	04	54
23/32	0.29601	3.37829	0.30990	3.22689	0.95519	1.04692	17	13	05
3/4	0.29827	3.35261	0.31250	3.20000	0.95448	1.04769	17	21	14
25/32	0.30054	3.32738	0.31510	3.17355	0.95377	1.04847	17	29	23
13/16	0.30279	3.30258	0.31771	3.14754	0.95306	1.04926	17	37	32
27/32	0.30505	3.27820	0.32031	3.12195	0.95234	1.05005	17	45	39
7/8	0.30729	3.25423	0.32292	3.09677	0.95161	1.05085	17	53	46
29/32	0.30953	3.23066	0.32552	3.07200	0.95089	1.05165	18	01	52
15/16	0.31177	3.20749	0.32813	3.04762	0.95016	1.05246	18	09	57
31/32	0.31400	3.18470	0.33073	3.02362	0.94942	1.05327	18	18	02
1	0.31623	3.16228	0.33333	3.00000	0.94868	1.05409	18	26	06

3″

Fraction of an Inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	9.38478	0.61522	9.39794	0.60206	9.98684	0.01316	14	02	10
1/32	9.38901	0.61099	9.40244	0.59756	9.98657	0.01343	14	10	36
1/16	9.39319	0.60681	9.40689	0.59311	9.98630	0.01370	14	19	00
3/32	9.39733	0.60267	9.41130	0.58870	9.98603	0.01397	14	27	24
1/8	9.40142	0.59858	9.41567	0.58433	9.98575	0.01425	14	35	48
5/32	9.40546	0.59454	9.41999	0.58001	9.98547	0.01453	14	44	10
3/16	9.40946	0.59054	9.42427	0.57573	9.98520	0.01480	14	52	32
7/32	9.41342	0.58658	9.42851	0.57149	9.98491	0.01509	15	00	54
1/4	9.41733	0.58267	9.43270	0.56730	9.98463	0.01537	15	09	15
9/32	9.42120	0.57880	9.43686	0.56314	9.98434	0.01566	15	17	35
5/16	9.42503	0.57497	9.44097	0.55903	9.98405	0.01595	15	25	54
11/32	9.42881	0.57119	9.44505	0.55495	9.98376	0.01624	15	34	13
3/8	9.43256	0.56744	9.44909	0.55091	9.98347	0.01653	15	42	31
13/32	9.43627	0.56373	9.45310	0.54690	9.98317	0.01683	15	50	49
7/16	9.43994	0.56006	9.45706	0.54294	9.98287	0.01713	15	59	05
15/32	9.44357	0.55643	9.46099	0.53901	9.98257	0.01743	16	07	21
1/2	9.44716	0.55284	9.46489	0.53511	9.98227	0.01773	16	15	37
17/32	9.45071	0.54929	9.46875	0.53125	9.98197	0.01803	16	23	51
9/16	9.45423	0.54577	9.47257	0.52743	9.98166	0.01834	16	32	05
19/32	9.45772	0.54228	9.47637	0.52363	9.98135	0.01865	16	40	19
5/8	9.46116	0.53884	9.48013	0.51987	9.98104	0.01896	16	48	31
21/32	9.46458	0.53542	9.48385	0.51615	9.98072	0.01928	16	56	43
11/16	9.46796	0.53204	9.48755	0.51245	9.98041	0.01959	17	04	54
23/32	9.47130	0.52870	9.49122	0.50878	9.98009	0.01991	17	13	05
3/4	9.47462	0.52538	9.49485	0.50515	9.97977	0.02023	17	21	14
25/32	9.47790	0.52210	9.49845	0.50155	9.97944	0.02056	17	29	23
13/16	9.48115	0.51885	9.50203	0.49797	9.97912	0.02088	17	37	32
27/32	9.48436	0.51564	9.50557	0.49443	9.97879	0.02121	17	45	39
7/8	9.48755	0.51245	9.50909	0.49091	9.97846	0.02154	17	53	46
29/32	9.49071	0.50929	9.51258	0.48742	9.97813	0.02187	18	01	52
15/16	9.49383	0.50617	9.51604	0.48396	9.97780	0.02220	18	09	57
31/32	9.49693	0.50307	9.51947	0.48053	9.97746	0.02254	18	18	02
1	9.50000	0.50000	9.52288	0.47712	9.97712	0.02288	18	26	06

4"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.31623	3.16228	0.33333	3.00000	0.94868	1.05409	18	26	06
1/32	0.31845	3.14022	0.33594	2.97674	0.94794	1.05492	18	34	09
1/16	0.32066	3.11853	0.33854	2.95385	0.94719	1.05575	18	42	11
3/32	0.32287	3.09718	0.34115	2.93130	0.94644	1.05659	18	50	13
1/8	0.32508	3.07617	0.34375	2.90909	0.94569	1.05743	18	58	13
5/32	0.32728	3.05549	0.34635	2.88722	0.94493	1.05828	19	06	13
3/16	0.32947	3.03514	0.34896	2.86567	0.94416	1.05914	19	14	12
7/32	0.33166	3.01511	0.35156	2.84444	0.94340	1.06000	19	22	11
1/4	0.33385	2.99538	0.35417	2.82353	0.94263	1.06086	19	30	09
9/32	0.33603	2.97596	0.35677	2.80292	0.94185	1.06174	19	38	06
5/16	0.33820	2.95684	0.35938	2.78261	0.94107	1.06262	19	46	02
11/32	0.34037	2.93801	0.36198	2.76259	0.94029	1.06350	19	53	57
3/8	0.34253	2.91946	0.36458	2.74286	0.93951	1.06439	20	01	52
13/32	0.34469	2.90119	0.36719	2.72340	0.93872	1.06528	20	09	45
7/16	0.34684	2.88320	0.36979	2.70423	0.93793	1.06618	20	17	38
15/32	0.34898	2.86547	0.37240	2.68531	0.93713	1.06709	20	25	30
1/2	0.35112	2.84800	0.37500	2.66667	0.93633	1.06800	20	33	22
17/32	0.35326	2.83079	0.37760	2.64828	0.93553	1.06892	20	41	12
9/16	0.35539	2.81383	0.38021	2.63014	0.93472	1.06984	20	49	02
19/32	0.35751	2.79711	0.38281	2.61224	0.93391	1.07077	20	56	51
5/8	0.35963	2.78063	0.38542	2.59459	0.93310	1.07170	20	04	39
21/32	0.36174	2.76439	0.38802	2.57718	0.93228	1.07264	21	12	26
11/16	0.36385	2.74838	0.39063	2.56000	0.93146	1.07359	21	20	13
23/32	0.36595	2.73260	0.39323	2.54305	0.93063	1.07454	21	27	58
3/4	0.36805	2.71703	0.39583	2.52632	0.92981	1.07549	21	35	43
25/32	0.37014	2.70169	0.39844	2.50980	0.92898	1.07645	21	43	27
13/16	0.37222	2.68656	0.40104	2.49351	0.92814	1.07742	21	51	10
27/32	0.37430	2.67163	0.40365	2.47742	0.92731	1.07839	21	58	52
7/8	0.37638	2.65691	0.40625	2.46154	0.92647	1.07937	22	06	34
29/32	0.37844	2.64239	0.40885	2.44586	0.92562	1.08035	22	14	15
15/16	0.38051	2.62807	0.41146	2.43038	0.92478	1.08134	22	21	54
31/32	0.38256	2.61394	0.41406	2.41509	0.92393	1.08233	22	29	33
1	0.38462	2.60000	0.41667	2.40000	0.92308	1.08333	22	37	12

4″

Fraction of an Inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	9.50000	0.50000	9.52288	0.47712	9.97712	0.02288	18	26	06
1/32	9.50304	0.49696	9.52626	0.47374	9.97678	0.02322	18	34	09
1/16	9.50605	0.49395	9.52961	0.47039	9.97644	0.02356	18	42	11
3/32	9.50903	0.49097	9.53294	0.46706	9·97609	0.02391	18	50	13
1/8	9.51199	0.48801	9.53624	0.46376	9.97575	0.02425	18	58	13
5/32	9·51492	0.48508	9.53952	0.46048	9.97540	0.02460	19	06	13
3/16	9.51782	0.48218	9.54277	0.45723	9.97505	0.02495	19	14	12
7/32	9.52070	0.47930	9.54600	0.45400	9.97469	0.02531	19	22	11
1/4	9.52355	0.47645	9.54921	0.45079	9.97434	0.02566	19	30	09
9/32	9.52637	0.47363	9.55239	0.44761	9.97398	0.02602	19	38	06
5/16	9.52917	0.47083	9.55555	0.44445	9.97362	0.02638	19	46	02
11/32	9.53195	0.46805	9.55868	0.44132	9.97326	0.02674	19	53	57
3/8	9.53470	0.46530	9.56180	0.43820	9.97290	0.02710	20	01	52
13/32	9.53742	0.46258	9.56489	0.43511	9.97254	0.02746	20	09	45
7/16	9.54013	0.45987	9.56796	0.43204	9.97217	0.02783	20	17	38
15/32	9.54280	0.45720	9.57100	0.42900	9.97180	0.02820	20	25	30
1/2	9.54546	0.45454	9.57403	0.42597	9.97143	0.02857	20	33	22
17/32	9.54809	0.45191	9.57704	0.42296	9.97106	0.02894	20	41	12
9/16	9.55070	0.44930	9.58002	0.41998	9.97068	0.02932	20	49	02
19/32	9.55329	0.44671	9.58299	0.41701	9.97030	0.02970	20	56	51
5/8	9.55586	0.44414	9.58593	0.41407	9.96993	0.03007	21	04	39
21/32	9.55840	0.44160	9.58886	0.41114	9.96955	0.03045	21	12	26
11/16	9.56092	0.43908	9.59176	0.40824	9.96916	0.03084	21	20	13
23/32	9.56342	0.43658	9.59465	0.40535	9.96878	0.03122	21	27	58
3/4	9.56591	0.43409	9.59751	0.40249	9.96839	0.03161	21	35	43
25/32	9.56836	0.43164	9.60036	0.39964	9.96800	0.03200	21	43	27
13/16	9.57080	0.42920	9.60319	0.39681	9.96761	0.03239	21	51	10
27/32	9.57322	0.42678	9.60600	0.39400	9.96722	0.03278	21	58	52
7/8	9.57562	0.42438	9.60879	0.39121	9.96683	0.03317	22	06	34
29/32	9.57800	0.42200	9.61157	0.38843	9.96643	0.03357	22	14	15
15/16	9.58036	0.41964	9.61433	0.38567	9.96604	0.03396	22	21	54
31/32	9.58270	0.41730	9.61707	0.38293	9.96564	0.03436	22	29	33
1	9.58503	0.41497	9.61979	0.38021	9.96524	0.03476	22	37	12

5"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.38462	2.60000	0.41667	2.40000	0.92308	1.08333	22	37	12
1/32	0.38666	2.58625	0.41927	2.38509	0.92222	1.08434	22	44	49
1/16	0.38870	2.57268	0.42188	2.37037	0.92136	1.08535	22	52	25
3/32	0.39073	2.55928	0.42448	2.35583	0.92050	1.08636	23	00	01
1/8	0.39276	2.54607	0.42708	2.34146	0.91964	1.08738	23	07	35
5/32	0.39479	2.53302	0.42969	2.32727	0.91877	1.08841	23	15	09
3/16	0.39680	2.52015	0.43229	2.31325	0.91790	1.08944	23	22	42
7/32	0.39881	2.50744	0.43490	2.29940	0.91703	1.09047	23	30	14
1/4	0.40082	2.49489	0.43750	2.28571	0.91616	1.09152	23	37	46
9/32	0.40282	2.48251	0.44010	2.27219	0.91528	1.09256	23	45	16
5/16	0.40481	2.47028	0.44271	2.25882	0.91440	1.09361	23	52	46
11/32	0.40680	2.45821	0.44531	2.24561	0.91352	1.09467	24	00	14
3/8	0.40878	2.44629	0.44792	2.23256	0.91263	1.09573	24	07	42
13/32	0.41076	2.43451	0.45052	2.21965	0.91174	1.09680	24	15	09
7/16	0.41273	2.42289	0.45313	2.20690	0.91085	1.09787	24	22	35
15/32	0.41470	2.41141	0.45573	2.19429	0.90996	1.09895	24	30	00
1/2	0.41666	2.40007	0.45833	2.18182	0.90907	1.10003	24	37	25
17/32	0.41861	2.38887	0.46094	2.16949	0.90817	1.10112	24	44	48
9/16	0.42056	2.37781	0.46354	2.15730	0.90727	1.10221	24	52	11
19/32	0.42250	2.36688	0.46615	2.14525	0.90636	1.10331	24	59	33
5/8	0.42443	2.35608	0.46875	2.13333	0.90546	1.10441	25	06	53
21/32	0.42636	2.34541	0.47135	2.12155	0.90455	1.10552	25	14	13
11/16	0.42829	2.33487	0.47396	2.10989	0.90364	1.10663	25	21	32
23/32	0.43021	2.32446	0.47656	2.09836	0.90273	1.10775	25	28	51
3/4	0.43212	2.31417	0.47917	2.08696	0.90182	1.10887	25	36	08
25/32	0.43403	2.30400	0.48177	2.07568	0.90090	1.11000	25	43	24
13/16	0.43593	2.29395	0.48438	2.06452	0.89998	1.11113	25	50	40
27/32	0.43782	2.28402	0.48698	2.05348	0.89906	1.11227	25	57	54
7/8	0.43971	2.27421	0.48958	2.04255	0.89814	1.11341	26	05	08
29/32	0.44160	2.26451	0.49219	2.03175	0.89721	1.11456	26	12	21
15/16	0.44348	2.25492	0.49479	2.02105	0.89629	1.11571	26	19	33
31/32	0.44535	2.24544	0.49740	2.01047	0.89536	1.11687	26	26	44
1	0.44721	2.23607	0.50000	2.00000	0.89443	1.11803	26	33	54

5″

Fraction of an Inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	9.58503	0.41497	9.61979	0.38021	9.96524	0.03476	22	37	12
1/32	9.58733	0.41267	9.62249	0.37751	9.96484	0.03516	22	44	49
1/16	9.58962	0.41038	9.62518	0.37482	9.96443	0.03557	22	52	25
3/32	9.59188	0.40812	9.62786	0.37214	9.96403	0.03597	23	00	01
1/8	9.59413	0.40587	9.63051	0.36949	9.96362	0.03638	23	07	35
5/32	9.59636	0.40364	9.63315	0.36685	9.96321	0.03679	23	15	09
3/16	9.59857	0.40143	9.63578	0.36422	9.96280	0.03720	23	22	42
7/32	9.60077	0.39923	9.63839	0.36161	9.96238	0.03762	23	30	14
1/4	9.60295	0.39705	9.64098	0.35902	9.96197	0.03803	23	37	46
9/32	9.60511	0.39489	9.64356	0.35644	9.96155	0.03845	23	45	16
5/16	9.60725	0.39275	9.64612	0.35388	9.96114	0.03886	23	52	46
11/32	9.60938	0.39062	9.64866	0.35134	9.96072	0.03928	24	00	14
3/8	9.61149	0.38851	9.65120	0.34880	9.96030	0.03970	24	07	42
13/32	9.61359	0.38641	9.65371	0.34629	9.95987	0.04013	24	15	09
7/16	9.61567	0.38433	9.65622	0.34378	9.95945	0.04055	24	22	35
15/32	9.61773	0.38227	9.65871	0.34129	9.95902	0.04098	24	30	00
1/2	9.61978	0.38022	9.66118	0.33882	9.95859	0.04141	24	37	25
17/32	9.62181	0.37819	9.66364	0.33636	9.95817	0.04183	24	44	48
9/16	9.62382	0.37618	9.66609	0.33391	9.95773	0.04227	24	52	11
19/32	9.62582	0.37418	9.66852	0.33148	9.95730	0.04270	24	59	33
5/8	9.62781	0.37219	9.67094	0.32906	9.95687	0.04313	25	06	53
21/32	9.62978	0.37022	9.67335	0.32665	9.95643	0.04357	25	14	13
11/16	9.63174	0.36826	9.67574	0.32426	9.95600	0.04400	25	21	32
23/32	9.63368	0.36632	9.67812	0.32188	9.95556	0.04444	25	28	51
3/4	9.63560	0.36440	9.68049	0.31951	9.95512	0.04488	25	36	08
25/32	9.63752	0.36248	9.68284	0.31716	9.95468	0.04532	25	43	24
13/16	9.63942	0.36058	9.68518	0.31482	9.95423	0.04577	25	50	40
27/32	9.64130	0.35870	9.68751	0.31249	9.95379	0.04621	25	57	54
7/8	9.64317	0.35683	9.68983	0.31017	9.95334	0.04666	26	05	08
29/32	9.64503	0.35497	9.69213	0.30787	9.95290	0.04710	26	12	21
15/16	9.64687	0.35313	9.69442	0.30558	9.95245	0.04755	26	19	33
31/32	9.64870	0.35130	9.69670	0.30330	9.95200	0.04800	26	26	44
1	9.65051	0.34949	9.69897	0.30103	9.95154	0.04846	26	33	54

6"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.44721	2.23607	0.50000	2.00000	0.89443	1.11803	26	33	54
1/32	0.44907	2.22680	0.50260	1.98964	0.89349	1.11920	26	41	03
1/16	0.45093	2.21765	0.50521	1.97938	0.89256	1.12037	26	28	12
3/32	0.45278	2.20859	0.50781	1.96923	0.89162	1.12155	26	55	19
1/8	0.45462	2.19964	0.51042	1.95918	0.89069	1.12273	27	02	26
5/32	0.45646	2.19078	0.51302	1.94924	0.88975	1.12392	27	09	32
3/16	0.45829	2.18203	0.51563	1.93939	0.88880	1.12511	27	16	36
7/32	0.46011	2.17337	0.51823	1.92965	0.88786	1.12630	27	23	40
1/4	0.46193	2.16481	0.52083	1.92000	0.88691	1.12751	27	30	43
9/32	0.46375	2.15634	0.52344	1.91045	0.88597	1.12871	27	37	45
5/16	0.46556	2.14797	0.52604	1.90099	0.88502	1.12992	27	44	46
11/32	0.46736	2.13968	0.52865	1.89163	0.88407	1.13114	27	51	47
3/8	0.46916	2.13149	0.53125	1.88235	0.88312	1.13235	27	58	46
13/32	0.47095	2.12339	0.53385	1.87317	0.88216	1.13358	28	05	45
7/16	0.47273	2.11537	0.53646	1.86408	0.88121	1.13481	28	12	42
15/32	0.47451	2.10744	0.53906	1.85507	0.88025	1.13604	28	19	39
1/2	0.47628	2.09959	0.54167	1.84615	0.87929	1.13728	28	26	35
17/32	0.47805	2.09183	0.54427	1.83732	0.87833	1.13852	28	33	29
9/16	0.47981	2.08415	0.54688	1.82857	0.87737	1.13977	28	40	23
19/32	0.48157	2.07655	0.54948	1.81991	0.87641	1.14102	28	47	16
5/8	0.48332	2.06903	0.55208	1.81132	0.87545	1.14228	28	54	09
21/32	0.48506	2.06159	0.55469	1.80282	0.87448	1.14354	29	01	00
11/16	0.48680	2.05423	0.55729	1.79439	0.87351	1.14480	29	07	50
23/32	0.48853	2.04694	0.55990	1.78605	0.87254	1.14607	29	14	39
3/4	0.49026	2.03973	0.56250	1.77778	0.87158	1.14735	29	21	28
25/32	0.49198	2.03259	0.56510	1.76959	0.87061	1.14863	29	28	16
13/16	0.49370	2.02553	0.56771	1.76147	0.86963	1.14991	29	35	02
27/32	0.49541	2.01854	0.57031	1.75342	0.86866	1.15120	29	41	48
7/8	0.49711	2.01162	0.57292	1.74545	0.86769	1.15249	29	48	33
29/32	0.49881	2.00477	0.57552	1.73756	0.86671	1.15379	29	55	17
15/16	0.50050	1.99799	0.57813	1.72973	0.86573	1.15509	30	02	00
31/32	0.50219	1.99128	0.58073	1.72197	0.86476	1.15639	30	08	42
1	0.50387	1.98463	0.58333	1.71429	0.86378	1.15770	30	15	23

6″

Fraction of an Inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	9.65051	0.34949	9.69897	0.30103	9.95154	0.04846	26	33	54
1/32	9.65232	0.34768	9.70123	0.29877	9.95109	0.04891	26	41	03
1/16	9.65411	0.34589	9.70347	0.29653	9.95064	0.04936	26	48	12
3/32	9.65588	0.34412	9.70570	0.29430	9.95018	0.04982	26	55	19
1/8	9.65765	0.34235	9.70792	0.29208	9.94972	0.05028	27	02	26
5/32	9.65940	0.34060	9.71014	0.28986	9.94927	0.05073	27	09	32
3/16	9.66114	0.33886	9.71233	0.28767	9.94881	0.05119	27	16	36
7/32	9.66287	0.33713	9.71452	0.28548	9.94834	0.05166	27	23	40
1/4	9.66458	0.33542	9.71670	0.28330	9.94789	0.05212	27	30	43
9/32	9.66628	0.33372	9.71886	0.28114	9.94742	0.05258	27	37	45
5/16	9.66797	0.33203	9.72102	0.27898	9.94695	0.05305	27	44	46
11/32	9.66965	0.33035	9.72316	0.27684	9.94649	0.05351	27	51	47
3/8	9.67132	0.32868	9.72530	0.27470	9.94602	0.05398	27	58	46
13/32	9.67297	0.32703	9.72742	0.27258	9.94555	0.05445	28	05	45
7/16	9.67461	0.32539	9.72954	0.27046	9.94508	0.05492	28	12	42
15/32	9.67625	0.32375	9.73164	0.26836	9.94461	0.05539	28	19	39
1/2	9.67787	0.32213	9.73373	0.26627	9.94413	0.05587	28	26	35
17/32	9.67947	0.32053	9.73582	0.26418	9.94366	0.05634	28	33	29
9/16	9.68107	0.31893	9.73789	0.26211	9.94318	0.05682	28	40	23
19/32	9.68266	0.31734	9.73995	0.26005	9.94271	0.05729	28	47	16
5/8	9.68423	0.31577	9.74200	0.25800	9.94223	0.05777	28	54	09
21/32	9.68580	0.31420	9.74405	0.25595	9.94175	0.05825	29	01	00
11/16	9.68735	0.31265	9.74608	0.25392	9.94127	0.05873	29	07	50
23/32	9.68889	0.31110	9.74811	0.25189	9.94079	0.05921	29	14	39
3/4	9.69043	0.30957	9.75012	0.24988	9.94031	0.05969	29	21	28
25/32	9.69195	0.30805	9.75213	0.24787	9.93982	0.06018	29	28	16
13/16	9.69346	0.30654	9.75413	0.24587	9.93934	0.06066	29	35	02
27/32	9.69496	0.30504	9.75611	0.24389	9.93885	0.06115	29	41	48
7/8	9.69645	0.30355	9.75809	0.24191	9.93836	0.06164	29	48	33
29/32	9.69794	0.30206	9.76006	0.23994	9.93787	0.06213	29	55	17
15/16	9.69941	0.30059	9.76202	0.23798	9.93738	0.06262	30	02	00
31/32	9.70087	0.29913	9.76397	0.23603	9.93689	0.06311	30	08	42
1	9.70232	0.29768	9.76592	0.23408	9.93640	0.06360	30	15	23

7"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.50387	1.98463	0.58333	1.71429	0.86378	1.15770	30	15	23
1/32	0.50555	1.97806	0.58594	1.70667	0.86280	1.15902	30	22	04
1/16	0.50722	1.97155	0.58854	1.69910	0.86182	1.16034	30	28	43
3/32	0.50888	1.96510	0.59115	1.69163	0.86084	1.16166	30	35	21
1/8	0.51054	1.95871	0.59375	1.68421	0.85986	1.16299	30	41	59
5/32	0.51219	1.95239	0.59635	1.67686	0.85887	1.16432	30	48	36
3/16	0.51384	1.94614	0.59896	1.66957	0.85789	1.16566	30	55	11
7/32	0.51548	1.93994	0.60156	1.66234	0.85690	1.16700	31	01	46
1/4	0.51712	1.93380	0.60417	1.65517	0.85592	1.16834	31	08	20
9/32	0.51875	1.92773	0.60677	1.64807	0.85493	1.16969	31	14	53
5/16	0.52037	1.92171	0.60938	1.64103	0.85394	1.17104	31	21	26
11/32	0.52199	1.91575	0.61198	1.63404	0.85295	1.17240	31	27	57
3/8	0.52360	1.90985	0.61458	1.62712	0.85196	1.17376	31	34	27
13/32	0.52521	1.90400	0.61719	1.62025	0.85097	1.17513	31	40	57
7/16	0.52681	1.89821	0.61979	1.61345	0.84998	1.17650	31	47	25
15/32	0.52841	1.89248	0.62240	1.60669	0.84899	1.17787	31	53	53
1/2	0.53000	1.88680	0.62500	1.60000	0.84800	1.17925	32	00	19
17/32	0.53158	1.88117	0.62760	1.59336	0.84701	1.18063	32	06	45
9/16	0.53316	1.87560	0.63021	1.58678	0.84601	1.18202	32	13	10
19/32	0.53474	1.87008	0.63281	1.58025	0.84502	1.18341	32	19	34
5/8	0.53631	1.86461	0.63542	1.57377	0.84402	1.18480	32	25	57
21/32	0.53787	1.85919	0.63802	1.56735	0.84303	1.18620	32	32	19
11/16	0.53943	1.85382	0.64063	1.56098	0.84203	1.18760	32	38	41
23/32	0.54098	1.84850	0.64323	1.55466	0.84104	1.18901	32	45	01
3/4	0.54253	1.84323	0.64583	1.54839	0.84004	1.19042	32	51	21
25/32	0.54407	1.83801	0.64844	1.54217	0.83904	1.19184	32	57	39
13/16	0.54560	1.83284	0.65104	1.53600	0.83804	1.19325	33	03	57
27/32	0.54713	1.82771	0.65365	1.52988	0.83705	1.19468	33	10	14
7/8	0.54866	1.82263	0.65625	1.52381	0.83605	1.19610	33	16	30
29/32	0.55018	1.81760	0.65885	1.51779	0.83505	1.19753	33	22	45
15/16	0.55169	1.81261	0.66146	1.51181	0.83405	1.19897	33	28	59
31/32	0.55320	1.80767	0.66406	1.50588	0.83305	1.20041	33	35	12
1	0.55470	1.80278	0.66667	1.50000	0.83205	1.20185	33	41	24

7″

Fraction of an Inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	9.70232	0.29768	9.76592	0.23408	9.93640	0.06360	30	15	23
1/32	9.70376	0.29624	9.76785	0.23215	9.93591	0.06409	30	22	04
1/16	9.70519	0.29481	9.76978	0.23022	9.93542	0.06458	30	28	43
3/32	9.70662	0.29338	9.77169	0.22831	9.93492	0.06508	30	35	21
1/8	9.70803	0.29197	9.77360	0.22640	9.93443	0.06557	30	41	59
5/32	9.70943	0.29057	9.77550	0.22450	9.93393	0.06607	30	48	36
3/16	9.71083	0.28917	9.77740	0.22260	9.93343	0.06657	30	55	11
7/32	9.71221	0.28779	9.77928	0.22072	9.93293	0.06707	31	01	46
1/4	9.71359	0.28641	9.78116	0.21884	9.93243	0.06757	31	08	20
9/32	9.71495	0.28505	9.78302	0.21698	9.93193	0.06807	31	14	53
5/16	9.71631	0.28369	9.78488	0.21512	9.93143	0.06857	31	21	26
11/32	9.71766	0.28234	9.78674	0.21326	9.93092	0.06908	31	27	57
3/8	9.71900	0.28100	9.78858	0.21142	9.93042	0.06958	31	34	27
13/32	9.72033	0.27967	9.79042	0.20958	9.92992	0.07008	31	40	57
7/16	9.72166	0.27834	9.79225	0.20775	9.92941	0.07059	31	47	25
15/32	9.72297	0.27703	9.79407	0.20593	9.92890	0.07110	31	53	53
1/2	9.72427	0.27573	9.79588	0.20412	9.92839	0.07161	32	00	19
17/32	9.72557	0.27443	9.79769	0.20231	9.92789	0.07211	32	06	45
9/16	9.72686	0.27314	9.79948	0.20052	9.92738	0.07262	32	13	10
19/32	9.72814	0.27186	9.80128	0.19872	9.92687	0.07313	32	19	34
5/8	9.72941	0.27059	9.80306	0.19694	9.92635	0.07365	32	25	57
21/32	9.73068	0.26932	9.80483	0.19517	9.92584	0.07416	32	32	19
11/16	9.73193	0.26807	9.80660	0.19340	9.92533	0.07467	32	38	41
23/32	9.73318	0.26682	9.80837	0.19163	9.92481	0.07519	32	45	01
3/4	9.73442	0.26558	9.81012	0.18988	9.92430	0.07570	32	51	21
25/32	9.73565	0.26435	9.81187	0.18813	9.92378	0.07622	32	57	39
13/16	9.73688	0.26312	9.81361	0.18639	9.92327	0.07673	33	03	57
27/32	9.73809	0.26191	9.81534	0.18466	9.92275	0.07725	33	10	14
7/8	9.73930	0.26070	9.81707	0.18293	9.92223	0.07777	33	16	30
29/32	9.74050	0.25950	9.81879	0.18121	9.92171	0.07829	33	22	45
15/16	9.74169	0.25831	9.82050	0.17950	9.92119	0.07881	33	28	59
31/32	9.74288	0.25712	9.82221	0.17779	9.92067	0.07933	33	35	12
1	9.74406	0.25594	9.82391	0.17609	9.92015	0.07985	33	41	24

8"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.55470	1.80278	0.66667	1.50000	0.83205	1.20185	33	41	24
1/32	0.55620	1.79792	0.66927	1.49416	0.83105	1.20330	33	47	36
1/16	0.55769	1.79311	0.67188	1.48837	0.83005	1.20475	33	53	46
3/32	0.55918	1.78835	0.67448	1.48263	0.82905	1.20620	33	59	56
1/8	0.56066	1.78362	0.67708	1.47692	0.82805	1.20766	34	06	05
5/32	0.56213	1.77894	0.67969	1.47126	0.82705	1.20912	34	12	12
3/16	0.56360	1.77430	0.68229	1.46565	0.82605	1.21059	34	18	19
7/32	0.56507	1.76970	0.68490	1.46008	0.82504	1.21206	34	24	25
1/4	0.56653	1.76514	0.68750	1.45455	0.82404	1.21353	34	30	31
9/32	0.56798	1.76061	0.69010	1.44906	0.82304	1.21501	34	36	35
5/16	0.56943	1.75613	0.69271	1.44361	0.82204	1.21649	34	42	38
11/32	0.57088	1.75169	0.69531	1.43820	0.82104	1.21797	34	48	41
3/8	0.57231	1.74729	0.69792	1.43284	0.82003	1.21946	34	54	43
13/32	0.57375	1.74292	0.70052	1.42751	0.81903	1.22095	35	00	43
7/16	0.57518	1.73860	0.70313	1.42222	0.81803	1.22245	35	06	43
15/32	0.57660	1.73431	0.70573	1.41697	0.81703	1.22395	35	12	42
1/2	0.57802	1.73005	0.70833	1.41176	0.81602	1.22545	35	18	40
17/32	0.57943	1.72583	0.71094	1.40659	0.81502	1.22696	35	24	28
9/16	0.58084	1.72165	0.71354	1.40146	0.81402	1.22847	35	30	34
19/32	0.58224	1.71751	0.71615	1.39636	0.81302	1.22999	35	36	30
5/8	0.58364	1.71340	0.71875	1.39130	0.81202	1.23150	35	42	24
21/32	0.58503	1.70932	0.72135	1.38628	0.81101	1.23303	35	48	18
11/16	0.58641	1.70528	0.72396	1.38130	0.81001	1.23455	35	54	11
23/32	0.58780	1.70127	0.72656	1.37634	0.80901	1.23608	36	00	03
3/4	0.58917	1.69730	0.72917	1.37143	0.80801	1.23761	36	05	54
25/32	0.59054	1.69336	0.73177	1.36655	0.80701	1.23915	36	11	44
13/16	0.59191	1.68945	0.73438	1.36170	0.80600	1.24069	36	17	33
27/32	0.59327	1.68557	0.73698	1.35689	0.80500	1.24223	36	23	22
7/8	0.59463	1.68173	0.73958	1.35211	0.80400	1.24378	36	29	10
29/32	0.59598	1.67791	0.74219	1.34737	0.80300	1.24533	36	34	56
15/16	0.59732	1.67414	0.74479	1.34266	0.80200	1.24688	36	40	42
31/32	0.59866	1.67039	0.74740	1.33798	0.80100	1.24844	36	46	27
1	0.60000	1.66667	0.75000	1.33333	0.80000	1.25000	36	52	12

8″

Fraction of an Inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	9.74406	0.25594	9.82391	0.17609	9.92015	0.07985	33	41	24
1/32	9.74523	0.25477	9.82560	0.17440	9.91963	0.08037	33	47	36
1/16	9.74639	0.25361	9.82729	0.17271	9.91910	0.08090	33	53	46
3/32	9.74755	0.25245	9.82897	0.17103	9.91858	0.08142	33	59	56
1/8	9.74870	0.25130	9.83064	0.16936	9.91806	0.08194	34	06	05
5/32	9.74984	0.25016	9.83231	0.16769	9.91753	0.08247	34	12	12
3/16	9.75097	0.24903	9.83397	0.16603	9.91700	0.08300	34	18	19
7/32	9.75210	0.24790	9.83562	0.16438	9.91648	0.08352	34	24	25
1/4	9.75322	0.24678	9.83727	0.16273	9.91595	0.08405	34	30	31
9/32	9.75434	0.24566	9.83891	0.16109	9.91542	0.08458	34	36	35
5/16	9.75544	0.24456	9.84055	0.15945	9.91489	0.08511	34	42	38
11/32	9.75654	0.24346	9.84218	0.15782	9.91436	0.08564	34	48	41
3/8	9.75764	0.24236	9.84380	0.15620	9.91383	0.08617	34	54	43
13/32	9.75872	0.24128	9.84542	0.15458	9.91330	0.08670	35	00	43
7/16	9.75980	0.24020	9.84703	0.15297	9.91277	0.08723	35	06	43
15/32	9 76087	0.23913	9.84864	0.15136	9.91224	0.08776	35	12	42
1/2	9.76194	0.23806	9.85024	0.14976	9.91170	0.08830	35	18	40
17/32	9.76300	0.23700	9.85183	0.14817	9.91117	0.08883	35	24	38
9/16	9.76405	0.23595	9.85342	0.14658	9.91063	0.08937	35	30	34
19/32	9.76510	0.23490	9.85500	0.14500	9.91010	0.08990	35	36	30
5/8	9.76614	0.23386	9.85658	0.14342	9.90956	0.09044	35	42	24
21/32	9.76718	0.23282	9.85815	0.14185	9.90903	0.09097	35	48	18
11/16	9.76820	0.23180	9.85971	0.14029	9.90849	0.09151	35	54	11
23/32	9.76923	0.23077	9.86127	0.13873	9.90795	0.09205	36	00	03
3/4	9.77024	0.22976	9.86283	0.13717	9.90742	0.09258	36	05	54
25/32	9.77125	0.22875	9 86438	0.13562	9.90688	0.09312	36	11	44
13/16	9.77226	0.22774	9.86592	0.13408	9.90634	0.09366	36	17	33
27/32	9.77325	0.22675	9.86746	0.13254	9.90580	0.09420	36	23	22
7/8	9.77424	0.22576	9.86899	0.13101	9.90526	0.09474	36	29	10
29/32	9.77523	0.22477	9.87051	0.12949	9.90472	0.09528	36	34	56
15/16	9.77621	0.22379	9.87203	0.12797	9.90417	0.09583	36	40	42
31/32	9.77718	0.22282	9.87355	0.12645	9.90363	0.09637	36	46	27
1	9.77815	0.22185	9.87506	0.12494	9.90309	0.09691	36	52	12

9"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.60000	1.66667	0.75000	1.33333	0.80000	1.25000	36	52	12
1/32	0.60133	1.66298	0.75260	1.32872	0.79900	1.25156	36	57	55
1/16	0.60266	1.65932	0.75521	1.32414	0.79800	1.25313	37	03	37
3/32	0.60398	1.65569	0.75781	1.31959	0.79700	1.25470	37	09	19
1/8	0.60529	1.65209	0.76042	1.31507	0.79600	1.25628	37	15	00
5/32	0.60660	1.64852	0.76302	1.31058	0.79500	1.25786	37	20	40
3/16	0.60791	1.64498	0.76563	1.30612	0.79401	1.25944	37	26	19
7/32	0.60921	1.64147	0.76823	1.30170	0.79301	1.26102	37	31	57
1/4	0.61051	1.63798	0.77083	1.29730	0.79201	1.26261	37	37	34
9/32	0.61180	1.63452	0.77344	1.29293	0.79101	1.26420	37	43	11
5/16	0.61309	1.63109	0.77604	1.28859	0.79002	1.26580	37	48	47
11/32	0.61437	1.62769	0.77865	1.28428	0.78902	1.26740	37	54	21
3/8	0.61564	1.62431	0.78125	1.28000	0.78802	1.26900	37	59	56
13/32	0.61692	1.62097	0.78385	1.27575	0.78703	1.27060	38	05	29
7/16	0.61818	1.61764	0.78646	1.27152	0.78603	1.27221	38	11	01
15/32	0.61945	1.61435	0.78906	1.26733	0.78504	1.27382	38	16	32
1/2	0.62070	1.61108	0.79167	1.26316	0.78405	1.27544	38	22	03
17/32	0.62196	1.60783	0.79427	1.25902	0.78305	1.27705	38	27	33
9/16	0.62320	1.60461	0.79688	1.25490	0.78206	1.27868	38	33	02
19/32	0.62445	1.60142	0.79948	1.25081	0.78107	1.28030	38	38	30
5/8	0.62569	1.59825	0.80208	1.24675	0.78008	1.28193	38	43	57
21/32	0.62692	1.59510	0.80469	1.24272	0.77908	1.28356	38	49	24
11/16	0.62815	1.59198	0.80729	1.23871	0.77809	1.28519	38	54	49
23/32	0.62937	1.58888	0.80990	1.23473	0.77710	1.28683	39	00	14
3/4	0.63059	1.58581	0.81250	1.23077	0.77611	1.28847	39	05	38
25/32	0.63181	1.58276	0.81510	1.22684	0.77512	1.29011	39	11	01
13/16	0.63302	1.57973	0.81771	1.22293	0.77414	1.29176	39	16	23
27/32	0.63422	1.57673	0.82031	1.21905	0.77315	1.29341	39	21	45
7/8	0.63542	1.57375	0.82292	1.21519	0.77216	1.29506	39	27	06
29/32	0.63662	1.57079	0.82552	1.21136	0.77118	1.29672	39	32	25
15/16	0.63781	1.56785	0.82813	1.20755	0.77019	1.29838	39	37	44
31/32	0.63900	1.56494	0.83073	1.20376	0.76921	1.30004	39	43	03
1	0.64018	1.56205	0.83333	1.20000	0.76822	1.30171	39	48	20

9″

Fraction of an Inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec	Deg.	Min.	Sec.
0	9.77815	0.22185	9.87506	0.12494	9.90309	0.09691	36	52	12
1/32	9.77911	0.22089	9.87657	0.12343	9.90255	0.09745	36	57	55
1/16	9.78007	0.21993	9.87807	0.12193	9.90200	0.09800	37	03	37
3/32	9.78102	0.21898	9.87956	0.12044	9.90146	0.09854	37	09	19
1/8	9.78197	0.21803	9.88105	0.11895	9.90091	0.09909	37	15	00
5/32	9.78291	0.21709	9.88254	0.11746	9.90037	0.09963	37	20	40
3/16	9.78384	0.21616	9.88402	0.11598	9.89982	0.10018	37	26	19
7/32	9.78477	0.21523	9.88549	0.11451	9.89928	0.10072	37	31	57
1/4	9.78569	0.21431	9.88696	0.11304	9.89873	0.10127	37	37	34
9/32	9.78661	0.21339	9.88843	0.11157	9.89818	0.10182	37	43	11
5/16	9.78752	0.21248	9.88989	0.11011	9.89764	0.10236	37	48	47
11/32	9.78843	0.21157	9.89134	0.10866	9.89709	0.10291	37	54	21
3/8	9.78933	0.21067	9.89279	0.10721	9.89654	0.10346	37	59	56
13/32	9.79023	0.20977	9.89424	0.10576	9.89599	0.10401	38	05	29
7/16	9.79112	0.20888	9.89568	0.10432	9.89544	0.10456	38	11	01
15/32	9.79200	0.20800	9.89711	0.10289	9.89489	0.10511	38	16	32
1/2	9.79288	0.20712	9.89854	0.10146	9.89434	0.10566	38	22	03
17/32	9.79376	0.20624	9.89997	0.10003	9.89379	0.10621	38	27	33
9/16	9.79463	0.20537	9.90139	0.09861	9.89324	0.10676	38	33	02
19/32	9.79550	0.20450	9.90281	0.09719	9.89269	0.10731	38	38	30
5/8	9.79636	0.20364	9.90422	0.09578	9.89214	0.10786	38	43	57
21/32	9.79721	0.20279	9.90563	0.09437	9.89158	0.10842	38	49	24
11/16	9.79806	0.20194	9.90703	0.09297	9.89103	0.10897	38	54	49
23/32	9.79891	0.20109	9.90843	0.09157	9.89048	0.10952	39	00	14
3/4	9.79975	0.20025	9.90982	0.09018	9.88993	0.11007	39	05	38
25/32	9.80058	0.19942	9.91121	0.08879	9.88937	0.11063	39	11	01
13/16	9.80142	0.19858	9.91260	0.08740	9.88882	0.11118	39	16	23
27/32	9.80224	0.19776	9.91398	0.08602	9.88826	0.11174	39	21	45
7/8	9.80306	0.19694	9.91536	0.08464	9.88771	0.11229	39	27	06
29/32	9.80388	0.19612	9.91673	0.08327	9.88715	0.11285	39	32	25
15/16	9.80469	0.19531	9.91810	0.08190	9.88660	0.11340	39	37	44
31/32	9.80550	0.19450	9.91946	0.08054	9.88604	0.11396	39	43	03
1	9.80631	0.19369	9.92082	0.07918	9.88549	0.11451	39	48	20

10"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.64018	1.56205	0.83333	1.20000	0.76822	1.30171	39	48	20
1/32	0.64136	1.55918	0.83594	1.19626	0.76724	1.30338	39	53	37
1/16	0.64254	1.55633	0.83854	1.19255	0.76626	1.30505	39	58	52
3/32	0.64371	1.55350	0.84115	1.18885	0.76527	1.30672	40	04	07
1/8	0.64487	1.55070	0.84375	1.18519	0.76429	1.30840	40	09	22
5/32	0.64603	1.54791	0.84635	1.18154	0.76331	1.31008	40	14	35
3/16	0.64719	1.54515	0.84896	1.17791	0.76233	1.31177	40	19	48
7/32	0.64834	1.54240	0.85156	1.17431	0.76135	1.31345	40	24	59
1/4	0.64949	1.53968	0.85417	1.17073	0.76037	1.31514	40	30	10
9/32	0.65063	1.53698	0.85677	1.16717	0.75940	1.31684	40	35	20
5/16	0.65177	1.53429	0.85938	1.16364	0.75842	1.31853	40	40	30
11/32	0.65290	1.53163	0.86198	1.16012	0.75744	1.32023	40	45	38
3/8	0.65403	1.52898	0.86458	1.15663	0.75647	1.32193	40	50	46
13/32	0.65516	1.52636	0.86719	1.15315	0.75549	1.32364	40	55	53
7/16	0.65628	1.52375	0.86979	1.14970	0.75452	1.32534	41	00	59
15/32	0.65739	1.52116	0.87240	1.14627	0.75355	1.32706	41	06	05
1/2	0.65851	1.51859	0.87500	1.14286	0.75258	1.32877	41	11	09
17/32	0.65961	1.51604	0.87760	1.13947	0.75161	1.33048	41	16	13
9/16	0.66072	1.51351	0.88021	1.13609	0.75064	1.33220	41	21	16
19/32	0.66182	1.51100	0.88281	1.13274	0.74967	1.33393	41	26	18
5/8	0.66291	1.50850	0.88542	1.12941	0.74870	1.33565	41	31	20
21/32	0.66400	1.50602	0.88802	1.12610	0.74773	1.33738	41	36	21
11/15	0.66509	1.50356	0.89063	1.12281	0.74677	1.33911	41	41	21
23/32	0.66617	1.50112	0.89323	1.11953	0.74580	1.34084	41	46	20
3/4	0.66725	1.49869	0.89583	1.11628	0.74484	1.34258	41	51	18
25/32	0.66832	1.49628	0.89844	1.11304	0.74387	1.34432	41	56	16
13/16	0.66939	1.49389	0.90104	1.10983	0.74291	1.34606	42	01	13
27/32	0.67046	1.49152	0.90365	1.10663	0.74195	1.34780	42	06	09
7/8	0.67152	1.48916	0.90625	1.10345	0.74099	1.34955	42	11	04
29/32	0.67258	1.48682	0.90885	1.10029	0.74003	1.35130	42	15	59
15/16	0.67363	1.48449	0.91146	1.09714	0.73907	1.35305	42	20	52
31/32	0.67468	1.48219	0.91406	1.09402	0.73811	1.35481	42	25	45
1	0.67572	1.47989	0.91667	1.09091	0.73715	1.35657	42	30	38

Fraction of an inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	9.80631	0.19369	9.92082	0.07918	9.88549	0.11451	39	48	20
1/32	9.80710	0.19290	9.92217	0.07783	9.88493	0.11507	39	53	37
1/16	9.80790	0.19210	9.92352	0.07648	9.88437	0.11563	39	58	52
3/32	9.80869	0.19131	9.92487	0.07513	9.88382	0.11618	40	04	07
1/8	9.80947	0.19053	9.92621	0.07379	9.88326	0.11674	40	09	22
5/32	9.81025	0.18975	9.92755	0.07245	9.88270	0.11730	40	14	35
3/16	9.81103	0.18897	9.92889	0.07111	9.88214	0.11786	40	19	48
7/32	9.81180	0.18820	9.93022	0.06978	9.88159	0.11841	40	24	59
1/4	9.81257	0.18743	9.93154	0.06846	9.88103	0.11897	40	30	10
9/32	9.81333	0.18667	9.93286	0.06714	9.88047	0.11953	40	35	20
5/16	9.81409	0.18591	9.93418	0.06582	9.87991	0.12009	40	40	30
11/32	9.81485	0.18515	9.93550	0.06450	9.87935	0.12065	40	45	38
3/8	9.81560	0.18440	9.93681	0.06319	9.87879	0.12121	40	50	46
13/32	9.81634	0.18366	9.93811	0.06189	9.87823	0.12177	40	55	53
7/16	9.81709	0.18291	9.93942	0.06058	9.87767	0.12233	41	00	59
15/32	9.81782	0 18218	9.94071	0.05929	9.87711	0.12289	41	06	05
1/2	9.81856	0.18144	9.94201	0.05799	9.87655	0.12345	41	11	09
17/32	9.81929	0.18071	9.94330	0.05670	9.87599	0.12401	41	16	13
9/16	9.82001	0.17999	9.94459	0.05541	9.87543	0.12457	41	21	16
19/32	9.82074	0.17926	9.94587	0.05413	9.87487	0.12513	41	26	18
5/8	9.82145	0.17855	9.94715	0.05285	9.87431	0.12569	41	31	20
21/32	9.82217	0.17783	9.94842	0.05158	9.87375	0.12625	41	36	21
11/16	9.82288	0.17712	9.94969	0.05031	9.87318	0.12682	41	41	21
23/32	9.82359	0.17641	9.95096	0.04904	9.87262	0.12738	41	46	20
3/4	9.82429	0.17571	9.95223	0.04777	9.87206	0.12794	41	51	18
25/32	9.82499	0.17501	9.95349	0.04651	9.87150	0.12850	41	56	16
13/16	9.82568	0.17432	9.95474	0.04526	9.87094	0.12906	42	01	13
27/32	9.82637	0.17363	9.95600	0.04400	9.87037	0.12963	42	06	09
7/8	9.82706	0.17294	9.95725	0.04275	9.86981	0.13019	42	11	04
29/32	9.82774	0.17226	9.95849	0.04151	9.86925	0.13075	42	15	59
15/16	9.82842	0.17158	9.95974	0.04026	9.86868	0.13132	42	20	52
31/32	9.82910	0.17090	9.96098	0.03902	9.86812	0.13188	42	25	45
1	9.82977	0.17023	9.96221	0.03779	9.86756	0.13244	42	30	38

11"

Fraction of an Inch	NATURAL FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec.	Deg.	Min.	Sec.
0	0.67572	1.47989	0.91667	1.09091	0.73715	1.35657	42	30	38
1/32	0.67677	1.47762	0.91927	1.08782	0.73620	1.35833	42	35	29
1/16	0.67780	1.47536	0.92188	1.08475	0.73524	1.36009	42	40	20
3/32	0.67884	1.47311	0.92448	1.08169	0.73429	1.36186	42	45	10
1/8	0.67987	1.47088	0.92708	1.07865	0.73334	1.36363	42	49	59
5/32	0.68089	1.46867	0.92969	1.07563	0.73239	1.36540	42	54	48
3/16	0.68191	1.46647	0.93229	1.07263	0.73144	1.36718	42	59	35
7/32	0.68293	1.46428	0.93490	1.06964	0.73049	1.36895	43	04	22
1/4	0.68394	1.46211	0.93750	1.06667	0.72954	1.37073	43	09	09
9/32	0.68495	1.45996	0.94010	1.06371	0.72859	1.37251	43	13	54
5/16	0.68596	1.45782	0.94271	1.06077	0.72764	1.37430	43	18	39
11/32	0.68696	1.45570	0.94531	1.05785	0.72670	1.37609	43	23	23
3/8	0.68795	1.45358	0.94792	1.05495	0.72575	1.37788	43	28	06
13/32	0.68895	1.45149	0.95052	1.05205	0.72481	1.37967	43	32	49
7/16	0.68994	1.44941	0.95313	1.04918	0.72387	1.38147	43	37	31
15/32	0.69092	1.44734	0.95573	1.04632	0.72293	1.38326	43	42	12
1/2	0.69191	1.44528	0.95833	1.04348	0.72199	1.38506	43	46	52
17/32	0.69288	1.44324	0.96094	1.04065	0.72105	1.38687	43	51	32
9/16	0.69386	1.44122	0.96354	1.03784	0.72011	1.38867	43	56	11
19/32	0.69483	1.43920	0.96615	1.03504	0.71918	1.39048	44	00	49
5/8	0.69580	1.43720	0.96875	1.03226	0.71824	1.39229	44	05	26
21/32	0.69676	1.43522	0.97135	1.02949	0.71731	1.39411	44	10	03
11/16	0.69772	1.43325	0.97396	1.02674	0.71637	1.39592	44	14	39
23/32	0.69867	1.43128	0.97656	1.02400	0.71544	1.39774	44	19	14
3/4	0.69963	1.42934	0.97917	1.02128	0.71451	1.39956	44	23	49
25/32	0.70057	1.42740	0.98177	1.01857	0.71358	1.40138	44	28	23
13/16	0.70152	1.42548	0.98438	1.01587	0.71265	1.40321	44	32	56
27/32	0.70246	1.42357	0.98698	1.01319	0.71172	1.40504	44	37	28
7/8	0.70340	1.42168	0.98958	1.01053	0.71080	1.40687	44	42	00
29/32	0.70433	1.41979	0.99219	1.00787	0.70987	1.40870	44	46	31
15/16	0.70526	1.41792	0.99479	1.00524	0.70895	1.41054	44	51	01
31/32	0.70618	1.41606	0.99740	1.00261	0.70803	1.41237	44	55	31
1	0.70711	1.41421	1.00000	1.00000	0.70711	1.41421	45	00	00

11″

Fraction of an Inch	LOGARITHMIC FUNCTIONS						Angle		
	Sine.	Cosec.	Tang.	Cotang.	Cosine.	Sec	Deg.	Min.	Sec.
0	9.82977	0.17023	9.96221	0.03779	9.86756	0.13244	42	30	38
1/32	9.83044	0.16956	9.96344	0.03656	9.86699	0.13301	42	35	29
1/16	9.83110	0.16890	9.96467	0.03533	9.86643	0.13357	42	40	20
3/32	9.83177	0.16823	9.96590	0.03410	9.86587	0.13413	42	45	10
1/8	9.83242	0.16758	9.96712	0.03288	9.86530	0.13470	42	49	59
5/32	9.83308	0.16692	9.96834	0.03166	9.86474	0.13526	42	54	48
3/16	9.83373	0.16627	9.96955	0.03045	9.86418	0.13582	42	59	35
7/32	9.83437	0.16563	9.97076	0.02924	9.86361	0.13639	43	04	22
1/4	9.83502	0.16498	9.97197	0.02803	9.86305	0.13695	43	09	09
9/32	9.83566	0.16434	9.97318	0.02682	9.86248	0.13752	43	13	54
5/16	9.83630	0.16370	9.97438	0.02562	9.86192	0.13808	43	18	39
11/32	9.83693	0.16307	9.97558	0.02442	9.86135	0.13865	43	23	23
3/8	9.83756	0.16244	9.97677	0.02323	9.86079	0.13921	43	28	06
13/32	9.83819	0.16181	9.97796	0.02204	9.86022	0.13978	43	32	49
7/16	9.83881	0.16119	9.97915	0.02085	9.85966	0.14034	43	37	31
15/32	9.83943	0.16057	9.98033	0.01967	9.85909	0.14091	43	42	12
1/2	9.84005	0.15995	9.98152	0.01848	9.85853	0.14147	43	46	52
17/32	9.84066	0.15934	9.98270	0.01730	9.85797	0.14203	43	51	32
9/16	9.84127	0.15873	9.98387	0.01613	9.85740	0.14260	43	56	11
19/32	9.84188	0.15812	9.98504	0.01496	9.85683	0.14317	44	00	49
5/8	9.84248	0.15752	9.98621	0.01379	9.85627	0.14373	44	05	26
21/32	9.84308	0.15692	9.98738	0.01262	9.85570	0.14430	44	10	03
11/16	9.84368	0.15632	9.98854	0.01146	9.85514	0.14486	44	14	39
23/32	9.84427	0.15573	9.98970	0.01030	9.85457	0.14543	44	19	14
3/4	9.84487	0.15513	9.99086	0.00914	9.85401	0.14599	44	23	49
25/32	9.84545	0.15455	9.99201	0.00799	9.85344	0.14656	44	28	23
13/16	9.84604	0.15396	9.99316	0.00684	9.85288	0.14712	44	32	56
27/32	9.84662	0.15338	9.99431	0.00569	9.85231	0.14769	44	37	28
7/8	9.84720	0.15280	9.99545	0.00455	9.85175	0.14825	44	42	00
29/32	9.84778	0.15222	9.99659	0.00341	9.85118	0.14882	44	46	31
15/16	9.84835	0.15165	9.99773	0.00227	9.85062	0.14938	44	51	01
31/32	9.84892	0.15108	9.99887	0.00113	9.85005	0.14995	44	55	31
1	9.84949	0.15051	0.00000	0.00000	9.84949	0.15051	45	00	00

MULTIPLICATION TABLE FOR RIVET SPACING.

In.	1	2	3	4	5	6	7	8	9	10
1⅛	-1⅛	- 2¼	- 3⅜	- 4½	- 5⅝	- 6¾	- 7⅞	- 9	-10⅛	-11
1¼	-1¼	- 2½	- 3¾	- 5	- 6¼	- 7½	- 8¾	-10	-11¼	1-
1⅜	-1⅜	- 2¾	- 4⅛	- 5½	- 6⅞	- 8¼	- 9⅝	-11	1- 0⅜	1- 1
1½	-1½	- 3	- 4½	- 6	- 7½	- 9	-10½	1- 0	1- 1½	1- 3
1⅝	-1⅝	- 3¼	- 4⅞	- 6½	- 8⅛	- 9¾	-11⅜	1- 1	1- 2⅝	1- 4
1¾	-1¾	- 3½	- 5¼	- 7	- 8¾	-10½	1- 0¼	1- 2	1- 3¾	1- 5
1⅞	-1⅞	- 3¾	- 5⅝	- 7½	- 9⅜	-11¼	1- 1⅛	1- 3	1- 4⅞	1- 6
2	-2	- 4	- 6	- 8	- 10	1- 0	1- 2	1- 4	1- 6	1- 8
2⅛	-2⅛	- 4¼	- 6⅜	- 8½	-10⅝	1- 0¾	1 -2⅞	1- 5	1- 7⅛	.1- 9
2¼	-2¼	- 4½	- 6¾	- 9	-11¼	1- 1½	1- 3¾	1- 6	1- 8¼	1-10
2⅜	-2⅜	- 4¾	- 7⅛	- 9½	-11⅞	1- 2¼	1- 4⅝	1- 7	1- 9⅜	1-11
2½	-2½	- 5	- 7½	-10	1- 0½	1- 3	1- 5½	1- 8	1-10½	2- 1
2⅝	-2⅝	- 5¼	- 7⅞	-10½	1- 1⅛	1- 3¾	1- 6⅜	1- 9	1-11⅝	2- 2
2¾	-2¾	- 5½	- 8¼	-11	1- 1¾	1- 4½	1- 7¼	1-10	2- 0¾	2- 3
2⅞	-2⅞	- 5¾	- 8⅝	-11½	1 -2⅜	1- 5¼	1- 8⅛	1-11	2- 1⅞	2- 4
3	-3	- 6	- 9	1- 0	1 -3	1- 6	1- 9	2- 0	2- 3	2- 6
3⅛	-3⅛	- 6¼	- 9⅜	1- 0½	1- 3⅝	1- 6¾	1- 9⅞	2- 1	2- 4⅛	2- 7
3¼	-3¼	- 6½	- 9¾	1- 1	1- 4¼	1- 7½	1-10¾	2- 2	2- 5¼	2- 8
3⅜	-3⅜	- 6¾	-10⅛	1- 1½	1- 4⅞	1- 8¼	1-11⅝	2- 3	2- 6⅜	2- 9
3½	-3½	- 7	-10½	1- 2	1- 5½	1- 9	2- 0½	2- 4	2- 7½	2-11
3⅝	-3⅝	- 7¼	-10⅞	1- 2½	1- 6⅛	1- 9¾	2- 1⅜	2- 5	2- 8⅝	3- 0
3¾	-3¾	- 7½	-11¼	1- 3	1- 6¾	1-10½	2- 2¼	2- 6	2- 9¾	3- 1
3⅞	-3⅞	- 7¾	-11⅝	1- 3½	1- 7⅜	1-11¼	2- 3⅛	2- 7	2-10⅞	3- 2
4	-4	- 8	1- 0	1- 4	1- 8	2- 0	2- 4	2- 8	3- 0	3- 4
4⅛	-4⅛	- 8¼	1- 0⅜	1- 4½	1- 8⅝	2- 0¾	2- 4⅞	2- 9	3- 1⅛	3- 5
4¼	-4¼	- 8½	1- 0¾	1- 5	1- 9¼	2- 1½	2- 5¾	2-10	3- 2¼	3- 6
4⅜	-4⅜	- 8¾	1- 1⅛	1- 5½	1- 9⅞	2- 2¼	2- 6⅝	2-11	3- 3⅜	3- 7
4½	-4½	- 9	1- 1½	1- 6	1-10½	2- 3	2- 7½	3- 0	3- 4½	3- 9
4⅝	-4⅝	- 9¼	1- 1⅞	1- 6½	1-11⅛	2- 3¾	2- 8⅜	3- 1	3- 5⅝	3-10
4¾	-4¾	- 9½	1- 2¼	1- 7	1-11¾	2- 4½	2- 9¼	3- 2	3- 6¾	3-11
4⅞	-4⅞	- 9¾	1- 2⅝	1- 7½	2- 0⅜	2- 5¼	2-10⅛	3- 3	3- 7⅞	4- 0
5	-5	-10	1- 3	1- 8	2- 1	2- 6	2-11	3- 4	3- 9	4- 2
5⅛	-5⅛	-10¼	1- 3⅜	1- 8½	2- 1⅝	2- 6¾	2-11⅞	3- 5	3-10⅛	4 3
5¼	-5¼	-10½	1- 3¾	1- 9	2- 2¼	2- 7½	3- 0¾	3- 6	3-11¼	4- 4½
5⅜	-5⅜	-10¾	1- 4⅛	1- 9½	2- 2⅞	2- 8¼	3- 1⅝	3- 7	4- 0⅜	4- 5¾
5½	-5½	-11	1- 4½	1-10	2- 3½	2- 9	3- 2½	3- 8	4- 1½	4- 7
5⅝	-5⅝	-11¼	1- 4⅞	1-10½	2- 4⅛	2- 9¾	3- 3⅜	3- 9	4- 2⅝	4- 8¼
5¾	-5¾	-11½	1- 5¼	1-11	2- 4¾	2-10½	3- 4¼	3-10	4- 3¾	4- 9½
5⅞	-5⅞	-11¾	1- 5⅝	1-11½	2- 5⅜	2-11¼	3- 5⅛	3-11	4- 4⅞	4-10¾
6	-6	1- 0	1- 6	2- 0	2- 6	3- 0	3- 6	4- 0	4- 6	5- 0

MULTIPLICATION TABLE FOR RIVET SPACING.

In.	11	12	13	14	15	16	17	18	19	20
1⅛	1- 0⅜	1- 1½	1- 2⅝	1- 3¾	1- 4⅞	1- 6	1- 7⅛	1- 8¼	1- 9⅜	1-10½
1¼	1- 1¾	1- 3	1- 4¼	1- 5½	1- 6¾	1- 8	1- 9¼	1-10½	1-11¾	2- 1
1⅜	1- 3⅛	1- 4½	1- 5⅞	1- 7¼	1- 8⅝	1-10	1-11⅜	2- 0¾	2- 2⅛	2- 3½
1½	1- 4½	1- 6	1- 7½	1- 9	1-10½	2- 0	2- 1½	2- 3	2- 4½	2- 6
1⅝	1- 5⅞	1- 7½	1- 9⅛	1-10¾	2- 0⅜	2- 2	2- 3⅝	2- 5¼	2- 6⅞	2- 8½
1¾	1- 7¼	1- 9	1-10¾	2- 0½	2- 2¼	2- 4	2- 5¾	2- 7½	2- 9¼	2-11
1⅞	1- 8⅝	1-10½	2- 0⅜	2- 2¼	2- 4⅛	2- 6	2- 7⅞	2- 9¾	2-11⅝	3- 1½
2	1-10	2- 0	2- 2	2- 4	2- 6	2- 8	2-10	3- 0	3- 2	3- 4
2⅛	1-11⅜	2- 1½	2- 3⅝	2- 5¾	2- 7⅞	2-10	3- 0⅛	3- 2¼	3- 4⅜	3- 6½
2¼	2- 0¾	2- 3	2- 5¼	2- 7½	2- 9¾	3- 0	3- 2¼	3- 4½	3- 6¾	3- 9
2⅜	2- 2⅛	2- 4½	2- 6⅞	2- 9¼	2-11⅝	3- 2	3- 4⅜	3- 6¾	3- 9⅛	3-11½
2½	2- 3½	2- 6	2- 8½	2-11	3- 1½	3- 4	3- 6½	3- 9	3-11½	4- 2
2⅝	2- 4⅞	2- 7½	2-10⅛	3- 0¾	3- 3⅜	3- 6	3- 8⅝	3-11¼	4- 1⅞	4- 4½
2¾	2- 6¼	2- 9	2-11¾	3- 2½	3- 5¼	3- 8	3-10¾	4- 1½	4- 4¼	4- 7
2⅞	2- 7⅝	2-10½	3- 1⅜	3- 4¼	3- 7⅛	3-10	4- 0⅞	4- 3¾	4- 6⅝	4- 9½
3	2- 9	3- 0	3- 3	3- 6	3- 9	4- 0	4- 3	4- 6	4- 9	5- 0
3⅛	2-10⅜	3- 1½	3- 4⅝	3- 7¾	3-10⅞	4- 2	4- 5⅛	4- 8¼	4-11⅜	5- 2½
3¼	2-11¾	3- 3	3- 6¼	3- 9½	4- 0¾	4- 4	4- 7¼	4-10½	5- 1¾	5- 5
3⅜	3- 1⅛	3- 4½	3- 7⅞	3-11¼	4- 2⅝	4- 6	4- 9⅜	5- 0¾	5- 4⅛	5- 7½
3½	3- 2½	3- 6	3- 9½	4- 1	4- 4½	4- 8	4-11½	5- 3	5- 6½	5-10
3⅝	3- 3⅞	3- 7½	3-11⅛	4- 2¾	4- 6⅜	4-10	5- 1⅝	5- 5¼	5- 8⅞	6- 0½
3¾	3- 5¼	3- 9	4- 0¾	4- 4½	4- 8¼	5- 0	5- 3¾	5- 7½	5-11¼	6- 3
3⅞	3- 6⅝	3-10½	4- 2⅜	4- 6¼	4-10⅛	5- 2	5- 5⅞	5- 9¾	6- 1⅝	6- 5½
4	3- 8	4- 0	4- 4	4- 8	5- 0	5- 4	5- 8	6- 0	6- 4	6- 8
4⅛	3- 9⅜	4- 1½	4- 5⅝	4- 9¾	5- 1⅞	5- 6	5-10⅛	6- 2¼	6- 6⅜	6-10½
4¼	3-10¾	4- 3	4- 7¼	4-11½	5- 3¾	5- 8	6- 0¼	6- 4½	6- 8¾	7- 1
4⅜	4- 0⅛	4- 4½	4- 8⅞	5- 1¼	5- 5⅝	5-10	6- 2⅜	6- 6¾	6-11⅛	7- 3½
4½	4- 1½	4- 6	4-10½	5- 3	5- 7½	6- 0	6- 4½	6- 9	7- 1½	7- 6
4⅝	4- 2⅞	4- 7½	5- 0⅛	5- 4¾	5- 9⅜	6- 2	6- 6⅝	6-11¼	7- 3⅞	7- 8½
4¾	4- 4¼	4- 9	5- 1¾	5- 6½	5-11¼	6- 4	6- 8¾	7- 1½	7- 6¼	7-11
4⅞	4- 5⅝	4-10½	5- 3⅜	5- 8¼	6- 1⅛	6- 6	6-10⅞	7- 3¾	7- 8⅝	8-1½
5	4- 7	5- 0	5- 5	5-10	6- 3	6- 8	7- 1	7- 6	7-11	8- 4
5⅛	4- 8⅜	5- 1½	5- 6⅝	5-11¾	6- 4⅞	6-10	7- 3⅛	7- 8¼	8- 1⅜	8- 6½
5¼	4- 9¾	5- 3	5- 8¼	6- 1½	6- 6¾	7- 0	7- 5¼	7-10½	8- 3¾	8- 9
5⅜	4-11⅛	5- 4½	5- 9⅞	6- 3¼	6- 8⅝	7- 2	7- 7⅜	8- 0¾	8- 6⅛	8-11½
5½	5- 0½	5- 6	5-11½	6- 5	6-10½	7- 4	7- 9½	8- 3	8- 8½	9- 2
5⅝	5- 1⅞	5- 7½	6- 1⅛	6- 6¾	7- 0⅜	7- 6	7-11⅝	8- 5¼	8-10⅞	9- 4½
5¾	5- 3¼	5- 9	6- 2¾	6- 8½	7- 2¼	7- 8	8- 1¾	8- 7½	9- 1¼	9- 7
5⅞	5- 4⅝	5-10½	6- 4⅜	6-10¼	7- 4⅛	7 10	8- 3⅞	8- 9¾	9- 3⅝	9- 9½
6	5- 6	6- 0	6- 6	7- 0	7- 6	8- 0	8- 6	9- 0	9- 6	10- 0

MULTIPLICATION TABLE FOR RIVET SPACING.

In.	21	22	23	24	25	26	27	28	29	30
1⅛	1-11⅝	2- 0¾	2- 1⅞	2- 3	2- 4⅛	2- 5¼	2- 6⅜	2- 7½	2- 8⅝	2-
1¼	2- 2¼	2- 3½	2- 4¾	2- 6	2- 7¼	2- 8½	2- 9¾	2-11	3- 0¼	3-
1⅜	2- 4⅞	2- 6¼	2- 7⅝	2- 9	2-10⅜	2-11¾	3- 1⅛	3- 2½	3- 3⅞	3-
1½	2- 7½	2- 9	2-10½	3- 0	3- 1½	3- 3	3- 4½	3- 6	3- 7½	3-
1⅝	2-10⅛	2-11¾	3- 1⅜	3- 3	3- 4⅝	3- 6¼	3- 7⅞	3- 9½	3-11⅛	4-
1¾	3- 0¾	3- 2½	3- 4¼	3- 6	3- 7¾	3- 9½	3-11¼	4- 1	4- 2¾	4-
1⅞	3- 3⅜	3- 5¼	3- 7⅛	3- 9	3-10⅞	4- 0¾	4- 2⅝	4- 4½	4- 6⅜	4-
2	3- 6	3- 8	3-10	4- 0	4- 2	4- 4	4- 6	4- 8	4-10	5-
2⅛	3- 8⅝	3-10¾	4- 0⅞	4- 3	4- 5⅛	4- 7¼	4- 9⅜	4-11½	5- 1⅝	5-
2¼	3-11¼	4- 1½	4- 3¾	4- 6	4- 8¼	4-10½	5- 0¾	5- 3	5- 5¼	5-
2⅜	4- 1⅞	4- 4¼	4- 6⅝	4- 9	4-11⅜	5- 1¾	5- 4⅛	5- 6½	5- 8⅞	5-11
2½	4- 4½	4- 7	4- 9½	5- 0	5- 2½	5- 5	5- 7½	5-10	6- 0½	6-
2⅝	4- 7⅛	4- 9¾	5- 0⅜	5- 3	5- 5⅝	5- 8¼	5-10⅞	6- 1½	6- 4⅛	6-
2¾	4- 9¾	5- 0½	5- 3¼	5- 6	5- 8¾	5-11½	6- 2¼	6- 5	6- 7¾	6-1
2⅞	5- 0⅜	5- 3¼	5- 6⅛	5- 9	5-11⅞	6- 2¾	6- 5⅝	6- 8½	6-11⅜	7-2¼
3	5- 3	5- 6	5- 9	6- 0	6- 3	6- 6	6- 9	7- 0	7- 3	7-
3⅛	5- 5⅝	5- 8¾	5-11⅞	6- 3	6- 6⅛	6- 9¼	7- 0⅜	7- 3½	7- 6⅝	7-
3¼	5- 8¼	5-11½	6- 2¾	6- 6	6- 9¼	7- 0½	7- 3¾	7- 7	7-10¼	8-
3⅜	5-10⅞	6- 2¼	6- 5⅝	6- 9	7- 0⅜	7- 3¾	7- 7⅛	7-10½	8- 1⅞	8-
3½	6- 1½	6- 5	6- 8½	7- 0	7- 3½	7- 7	7-10½	8- 2	8- 5½	8-
3⅝	6- 4⅛	6- 7¾	6-11⅜	7- 3	7- 6⅝	7-10¼	8- 1⅞	8- 5½	8- 9⅛	9-
3¾	6- 6¾	6-10½	7- 2¼	7- 6	7- 9¾	8- 1½	8- 5¼	8- 9	9- 0¾	9-
3⅞	6- 9⅜	7- 1¼	7- 5⅛	7- 9	8- 0⅞	8- 4¾	8- 8⅝	9- 0½	9- 4⅜	9-
4	7- 0	7- 4	7- 8	8- 0	8- 4	8- 8	9- 0	9- 4	9- 8	10-
4⅛	7- 2⅝	7- 6¾	7-10⅞	8- 3	8- 7⅛	8-11¼	9- 3⅜	9 7½	9-11⅝	10-
4¼	7- 5¼	7- 9½	8- 1¾	8- 6	8-10¼	9- 2½	9- 6¾	9-11	10- 3¼	10-
4⅜	7- 7⅞	8- 0¼	8- 4⅝	8- 9	9- 1⅜	9- 5¾	9-10⅛	10- 2½	10- 6⅞	10-1
4½	7-10½	8- 3	8- 7½	9- 0	9- 4½	9- 9	10- 1½	10- 6	10-10½	11-
4⅝	8- 1⅛	8- 5¾	8-10⅜	9- 3	9- 7⅝	10- 0¼	10- 4⅞	10- 9½	11- 2⅛	11-
4¾	8- 3¾	8- 8½	9- 1¼	9- 6	9-10¾	10- 3½	10- 8¼	11- 1	11- 5¾	11-1
4⅞	8- 6⅜	8-11¼	9- 4⅛	9- 9	10- 1⅞	10- 6¾	10-11⅝	11- 4½	11- 9⅜	12-
5	8- 9	9- 2	9- 7	10- 0	10- 5	10-10	11- 3	11- 8	12- 1	12-
5⅛	8-11⅝	9- 4¾	9- 9⅞	10- 3	10- 8⅛	11- 1¼	11- 6⅜	11-11½	12- 4⅝	12-
5¼	9- 2¼	9- 7½	10- 0¾	10- 6	10-11¼	11- 4½	11- 9¾	12- 3	12- 8¼	13-
5⅜	9- 4⅞	9-10¼	10- 3⅝	10- 9	11- 2⅜	11- 7¾	12- 1⅛	12- 6½	12-11⅞	13-
5½	9- 7½	10- 1	10- 6½	11- 0	11- 5½	11-11	12- 4½	12-10	13- 3½	13-
5⅝	9-10⅛	10- 3¾	10- 9⅜	11- 3	11- 8⅝	12- 2¼	12- 7⅞	13- 1½	13- 7⅛	14-
5¾	10- 0¾	10- 6½	11- 0¼	11- 6	11-11¾	12- 5½	12-11¼	13- 5	13-10¾	14-
5⅞	10- 3⅜	10- 9¼	11- 3⅛	11- 9	12- 2⅞	12- 8¾	13- 2⅝	13- 8½	14- 2⅜	14-
6	10- 6	11- 0	11- 6	12- 0	12- 6	13- 0	13- 6	14- 0	14- 6	15-

Five-Decimal Logarithmic-Trigonometric Tables

Natural Trigonometric Functions

Including Secant and Cosecant

Squares, Cubes, Square Roots, Etc. Areas and Circumferences of Circles

BY

CONSTANTINE SMOLEY, C. E.
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Principal, School of Civil Engineering
International Correspondence Schools

SECOND EDITION, REVISED AND ENLARGED

McGRAW-HILL BOOK COMPANY
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PREFACE TO SECOND EDITION.

The scope of this edition has been enlarged first, by the inclusion of a table of Natural Functions giving the sine, cosine, tangent, cotangent, secant and cosecant for every minute of the quadrant. This table takes the place of the old table in which the functions were given by intervals of ten minutes. The other additions comrpise tables of Squares, Cubes, Square Roots, Cube Roots and Reciprocals of all numbers from 1 to 1,000; also tables of Areas and Circumferences of Circles with diameters from 1 to 1,000.

It is believed that by these additions a large field of theoretical as well as practical work is covered, and that they will be appreciated by the student as well as by the draftsman.

THE AUTHOR.

910 Taylor Ave., Scranton, Pa., September, 1910.

PREFACE TO FIRST EDITION.

This set of logarithmic-trigonometric tables was originally designed as a counterpart to the author's "Parallel Tables of Logarithms and Squares." The new arrangement of the tables of log. functions, the typography and convenient size of the page, justify, we believe, its publication as a separate book.

The classic works of Gauss & Albrecht were taken as the basis for this work and the proofs were checked both before and after electrotyping.

CONSTANTINE SMOLEY.

673 N. Claremont Ave.,
CHICAGO, ILL., January, 1908.

TABLE

OF

COMMON LOGARITHMS

OF NUMBERS

FROM 1 TO 10000

N.	Log.	N.	Log.	N.	Log.	N.	Log.	N.	Log.
0	—	**20**	**1. 30 103**	**40**	**1. 60 206**	**60**	**1. 77 815**	**80**	**1. 90 309**
1	0. 00 000	21	1. 32 222	41	1. 61 278	61	1. 78 533	81	1. 90 849
2	0. 30 103	22	1. 34 242	42	1. 62 325	62	1. 79 239	82	1. 91 381
3	0. 47 712	23	1. 36 173	43	1. 63 347	63	1. 79 934	83	1. 91 908
4	0. 60 206	24	1. 38 021	44	1. 64 345	64	1. 80 618	84	1. 92 428
5	**0. 69 897**	**25**	**1. 39 794**	**45**	**1. 65 321**	**65**	**1. 81 291**	**85**	**1. 92 942**
6	0. 77 815	26	1. 41 497	46	1. 66 276	66	1. 81 954	86	1. 93 450
7	0. 84 510	27	1. 43 136	47	1. 67 210	67	1. 82 607	87	1. 93 952
8	0. 90 309	28	1. 44 716	48	1. 68 124	68	1. 83 251	88	1. 94 448
9	0. 95 424	29	1. 46 240	49	1. 69 020	69	1. 83 885	89	1. 94 939
10	**1. 00 000**	**30**	**1. 47 712**	**50**	**1. 69 897**	**70**	**1. 84 510**	**90**	**1. 95 424**
11	1. 04 139	31	1. 49 136	51	1. 70 757	71	1. 85 126	91	1. 95 904
12	1. 07 918	32	1. 50 515	52	1. 71 600	72	1. 85 733	92	1. 96 379
13	1. 11 394	33	1. 51 851	53	1. 72 428	73	1. 86 332	93	1. 96 848
14	1. 14 613	34	1. 53 148	54	1. 73 239	74	1. 86 923	94	1. 97 313
15	**1. 17 609**	**35**	**1. 54 407**	**55**	**1. 74 036**	**75**	**1. 87 506**	**95**	**1. 97 772**
16	1. 20 412	36	1. 55 630	56	1. 74 819	76	1. 88 081	96	1. 98 227
17	1. 23 045	37	1. 56 820	57	1. 75 587	77	1. 88 649	97	1. 98 677
18	1. 25 527	38	1. 57 978	58	1. 76 343	78	1. 89 209	98	1. 99 123
19	1. 27 875	39	1. 59 106	59	1. 77 085	79	1. 89 763	99	1. 99 564
20	**1. 30 103**	**40**	**1. 60 206**	**60**	**1. 77 815**	**80**	**1. 90 309**	**100**	**2. 00 000**

N.	L. 0	1	2	3	4	5	6	7	8	9
100	**00 000**	**043**	**087**	**130**	**173**	**217**	**260**	**303**	**346**	**389**
101	432	475	518	561	604	647	689	732	775	817
102	860	903	945	988	*030	*072	*115	*157	*199	*242
103	01 284	326	368	410	452	494	536	578	620	662
104	703	745	787	828	870	912	953	995	*036	*078
105	**02 119**	**160**	**202**	**243**	**284**	**325**	**366**	**407**	**449**	**490**
106	531	572	612	653	694	735	776	816	857	898
107	938	979	*019	*060	*100	*141	*181	*222	*262	*302
108	03 342	383	423	463	503	543	583	623	663	703
109	743	782	822	862	902	941	981	*021	*060	*100
110	**04 139**	**179**	**218**	**258**	**297**	**336**	**376**	**415**	**454**	**493**
111	532	571	610	650	689	727	766	805	844	883
112	922	961	999	*038	*077	*115	*154	*192	*231	*269
113	05 308	346	385	423	461	500	538	576	614	652
114	690	729	767	805	843	881	918	956	994	*032
115	**06 070**	**108**	**145**	**183**	**221**	**258**	**296**	**333**	**371**	**408**
116	446	483	521	558	595	633	670	707	744	781
117	819	856	893	930	967	*004	*041	*078	*115	*151
118	07 188	225	262	298	335	372	408	445	482	518
119	555	591	628	664	700	737	773	809	846	882
120	**918**	**954**	**990**	***027**	***063**	***099**	***135**	***171**	***207**	***243**
121	08 279	314	350	386	422	458	493	529	565	600
122	636	672	707	743	778	814	849	884	920	955
123	991	*026	*061	*096	*132	*167	*202	*237	*272	*307
124	09 342	377	412	447	482	517	552	587	621	656
125	**691**	**726**	**760**	**795**	**830**	**864**	**899**	**934**	**968**	***003**
126	10 037	072	106	140	175	209	243	278	312	346
127	380	415	449	483	517	551	585	619	653	687
128	721	755	789	823	857	890	924	958	992	*025
129	11 059	093	126	160	193	227	261	294	327	361
130	**394**	**428**	**461**	**494**	**528**	**561**	**594**	**628**	**661**	**694**
131	727	760	793	826	860	893	926	959	992	*024
132	12 057	090	123	156	189	222	254	287	320	352
133	385	418	450	483	516	548	581	613	646	678
134	710	743	775	808	840	872	905	937	969	*001
135	**13 033**	**066**	**098**	**130**	**162**	**194**	**226**	**258**	**290**	**322**
136	354	386	418	450	481	513	545	577	609	640
137	672	704	735	767	799	830	862	893	925	956
138	988	*019	*051	*082	*114	*145	*176	*208	*239	*270
139	14 301	333	364	395	426	457	489	520	551	582
140	**613**	**644**	**675**	**706**	**737**	**768**	**799**	**829**	**860**	**891**
141	922	953	983	*014	*045	*076	*106	*137	*168	*198
142	15 229	259	290	320	351	381	412	442	473	503
143	534	564	594	625	655	685	715	746	776	806
144	836	866	897	927	957	987	*017	*047	*077	*107
145	**16 137**	**167**	**197**	**227**	**256**	**286**	**316**	**346**	**376**	**406**
146	435	465	495	524	554	584	613	643	673	702
147	732	761	791	820	850	879	909	938	967	997
148	17 026	056	085	114	143	173	202	231	260	289
149	319	348	377	406	435	464	493	522	551	580
N.	L. 0	1	2	3	4	5	6	7	8	9

PP.

	44	43	42
1	4.4	4.3	4.2
2	8.8	8.6	8.4
3	13.2	12.9	12.6
4	17.6	17.2	16.8
5	22.0	21.5	21.0
6	26.4	25.8	25.2
7	30.8	30.1	29.4
8	35.2	34.4	33.6
9	39.6	38.7	37.8

	41	40	39
1	4.1	4.0	3.9
2	8.2	8.0	7.8
3	12.3	12.0	11.7
4	16.4	16.0	15.6
5	20.5	20.0	19.5
6	24.6	24.0	23.4
7	28.7	28.0	27.3
8	32.8	32.0	31.2
9	36.9	36.0	35.1

	38	37	36
1	3.8	3.7	3.6
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3	11.4	11.1	10.8
4	15.2	14.8	14.4
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7	26.6	25.9	25.2
8	30.4	29.6	28.8
9	34.2	33.3	32.4

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3	10.5	10.2	9.9
4	14.0	13.6	13.2
5	17.5	17.0	16.5
6	21.0	20.4	19.8
7	24.5	23.8	23.1
8	28.0	27.2	26.4
9	31.5	30.6	29.7

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4	12.8	12.4	12.0
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PP.

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150	17 609	638	667	696	725	754	782	811	840	869
151	898	926	955	984	*013	*041	*070	*099	*127	*156
152	18 184	213	241	270	298	327	355	384	412	441
153	469	498	526	554	583	611	639	667	696	724
154	752	780	808	837	865	893	921	949	977	*005
155	19 033	061	089	117	145	173	201	229	257	285
156	312	340	368	396	424	451	479	507	535	562
157	590	618	645	673	700	728	756	783	811	838
158	866	893	921	948	976	*003	*030	*058	*085	*112
159	20 140	167	194	222	249	276	303	330	358	385
160	412	439	466	493	520	548	575	602	629	656
161	683	710	737	763	790	817	844	871	898	925
162	952	978	*005	*032	*059	*085	*112	*139	*165	*192
163	21 219	245	272	299	325	352	378	405	431	458
164	484	511	537	564	590	617	643	669	696	722
165	748	775	801	827	854	880	906	932	958	985
166	22 011	037	063	089	115	141	167	194	220	246
167	272	298	324	350	376	401	427	453	479	505
168	531	557	583	608	634	660	686	712	737	763
169	789	814	840	866	891	917	943	968	994	*019
170	23 045	070	096	121	147	172	198	223	249	274
171	300	325	350	376	401	426	452	477	502	528
172	553	578	603	629	654	679	704	729	754	779
173	805	830	855	880	905	930	955	980	*005	*030
174	24 055	080	105	130	155	180	204	229	254	279
175	304	329	353	378	403	428	452	477	502	527
176	551	576	601	625	650	674	699	724	748	773
177	797	822	846	871	895	920	944	969	993	*018
178	25 042	066	091	115	139	164	188	212	237	261
179	285	310	334	358	382	406	431	455	479	503
180	527	551	575	600	624	648	672	696	720	744
181	768	792	816	840	864	888	912	935	959	983
182	26 007	031	055	079	102	126	150	174	198	221
183	245	269	293	316	340	364	387	411	435	458
184	482	505	529	553	576	600	623	647	670	694
185	717	741	764	788	811	834	858	881	905	928
186	951	975	998	*021	*045	*068	*091	*114	*138	*161
187	27 184	207	231	254	277	300	323	346	370	393
188	416	439	462	485	508	531	554	577	600	623
189	646	669	692	715	738	761	784	807	830	852
190	875	898	921	944	967	989	*012	*035	*058	*081
191	28 103	126	149	171	194	217	240	262	285	307
192	330	353	375	398	421	443	466	488	511	533
193	556	578	601	623	646	668	691	713	735	758
194	780	803	825	847	870	892	914	937	959	981
195	29 003	026	048	070	092	115	137	159	181	203
196	226	248	270	292	314	336	358	380	403	425
197	447	469	491	513	535	557	579	601	623	645
198	667	688	710	732	754	776	798	820	842	863
199	885	907	929	951	973	994	*016	*038	*060	*081
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PP.

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200	**30 103**	**125**	**146**	**168**	**190**	**211**	**233**	**255**	**276**	**298**
201	320	341	363	384	406	428	449	471	492	514
202	535	557	578	600	621	643	664	685	707	728
203	750	771	792	814	835	856	878	899	920	942
204	963	984	*006	*027	*048	*069	*091	*112	*133	*154
205	**31 175**	**197**	**218**	**239**	**260**	**281**	**302**	**323**	**345**	**366**
206	387	408	429	450	471	492	513	534	555	576
207	597	618	639	660	681	702	723	744	765	785
208	806	827	848	869	890	911	931	952	973	994
209	32 015	035	056	077	098	118	139	160	181	201
210	**222**	**243**	**263**	**284**	**305**	**325**	**346**	**366**	**387**	**408**
211	428	449	469	490	510	531	552	572	593	613
212	634	654	675	695	715	736	756	777	797	818
213	838	858	879	899	919	940	960	980	*001	*021
214	33 041	062	082	102	122	143	163	183	203	224
215	**244**	**264**	**284**	**304**	**325**	**345**	**365**	**385**	**405**	**425**
216	445	465	486	506	526	546	566	586	606	626
217	646	666	686	706	726	746	766	786	806	826
218	846	866	885	905	925	945	965	985	*005	*025
219	34 044	064	084	104	124	143	163	183	203	223
220	**242**	**262**	**282**	**301**	**321**	**341**	**361**	**380**	**400**	**420**
221	439	459	479	498	518	537	557	577	596	616
222	635	655	674	694	713	733	753	772	792	811
223	830	850	869	889	908	928	947	967	986	*005
224	35 025	044	064	083	102	122	141	160	180	199
225	**218**	**238**	**257**	**276**	**295**	**315**	**334**	**353**	**372**	**392**
226	411	430	449	468	488	507	526	545	564	583
227	603	622	641	660	679	698	717	736	755	774
228	793	813	832	851	870	889	908	927	946	965
229	984	*003	*021	*040	*059	*078	*097	*116	*135	*154
230	**36 173**	**192**	**211**	**229**	**248**	**267**	**286**	**305**	**324**	**342**
231	361	380	399	418	436	455	474	493	511	530
232	549	568	586	605	624	642	661	680	698	717
233	736	754	773	791	810	829	847	866	884	903
234	922	940	959	977	996	*014	*033	*051	*070	*088
235	**37 107**	**125**	**144**	**162**	**181**	**199**	**218**	**236**	**254**	**273**
236	291	310	328	346	365	383	401	420	438	457
237	475	493	511	530	548	566	585	603	621	639
238	658	676	694	712	731	749	767	785	803	822
239	840	858	876	894	912	931	949	967	985	*003
240	**38 021**	**039**	**057**	**075**	**093**	**112**	**130**	**148**	**166**	**184**
241	202	220	238	256	274	292	310	328	346	364
242	382	399	417	435	453	471	489	507	525	543
243	561	578	596	614	632	650	668	686	703	721
244	739	757	775	792	810	828	846	863	881	899
245	**917**	**934**	**952**	**970**	**987**	***005**	***023**	***041**	***058**	***076**
246	39 094	111	129	146	164	182	199	217	235	252
247	270	287	305	322	340	358	375	393	410	428
248	445	463	480	498	515	533	550	568	585	602
249	620	637	655	672	690	707	724	742	759	777
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9	19.8	18.9

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9	18.0

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7	12.6
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9	16.2

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8	13.6
9	15.3

PP.

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250	39 794	811	829	846	863	881	898	915	933	950
251	967	985	*002	*019	*037	*054	*071	*088	*106	*123
252	40 140	157	175	192	209	226	243	261	278	295
253	312	329	346	364	381	398	415	432	449	466
254	483	500	518	535	552	569	586	603	620	637
255	654	671	688	705	722	739	756	773	790	807
256	824	841	858	875	892	909	926	943	960	976
257	993	*010	*027	*044	*061	*078	*095	*111	*128	*145
258	41 162	179	196	212	229	246	263	280	296	313
259	330	347	363	380	397	414	430	447	464	481
260	497	514	531	547	564	581	597	614	631	647
261	664	681	697	714	731	747	764	780	797	814
262	830	847	863	880	896	913	929	946	963	979
263	996	*012	*029	*045	*062	*078	*095	*111	*127	*144
264	42 160	177	193	210	226	243	259	275	292	308
265	325	341	357	374	390	406	423	439	455	472
266	488	504	521	537	553	570	586	602	619	635
267	651	667	684	700	716	732	749	765	781	797
268	813	830	846	862	878	894	911	927	943	959
269	975	991	*008	*024	*040	*056	*072	*088	*104	*120
270	43 136	152	169	185	201	217	233	249	265	281
271	297	313	329	345	361	377	393	409	425	441
272	457	473	489	505	521	537	553	569	584	600
273	616	632	648	664	680	696	712	727	743	759
274	775	791	807	823	838	854	870	886	902	917
275	933	949	965	981	996	*012	*028	*044	*059	*075
276	44 091	107	122	138	154	170	185	201	217	232
277	248	264	279	295	311	326	342	358	373	389
278	404	420	436	451	467	483	498	514	529	545
279	560	576	592	607	623	638	654	669	685	700
280	716	731	747	762	778	793	809	824	840	855
281	871	886	902	917	932	948	963	979	994	*010
282	45 025	040	056	071	086	102	117	133	148	163
283	179	194	209	225	240	255	271	286	301	317
284	332	347	362	378	393	408	423	439	454	469
285	484	500	515	530	545	561	576	591	606	621
286	637	652	667	682	697	712	728	743	758	773
287	788	803	818	834	849	864	879	894	909	924
288	939	954	969	984	*000	*015	*030	*045	*060	*075
289	46 090	105	120	135	150	165	180	195	210	225
290	240	255	270	285	300	315	330	345	359	374
291	389	404	419	434	449	464	479	494	509	523
292	538	553	568	583	598	613	627	642	657	672
293	687	702	716	731	746	761	776	790	805	820
294	835	850	864	879	894	909	923	938	953	967
295	982	997	*012	*026	*041	*056	*070	*085	*100	*114
296	47 129	144	159	173	188	202	217	232	246	261
297	276	290	305	319	334	349	363	378	392	407
298	422	436	451	465	480	494	509	524	538	553
299	567	582	596	611	625	640	654	669	683	698
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PP.	18	17	16	15	14
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5	9.0	8.5	8.0	7.5	7.0
6	10.8	10.2	9.6	9.0	8.4
7	12.6	11.9	11.2	10.5	9.8
8	14.4	13.6	12.8	12.0	11.2
9	16.2	15.3	14.4	13.5	12.6

N.	L. 0	1	2	3	4	5	6	7	8	9
300	**47 712**	**727**	**741**	**756**	**770**	**784**	**799**	**813**	**828**	**842**
301	857	871	885	900	914	929	943	958	972	986
302	48 001	015	029	044	058	073	087	101	116	130
303	144	159	173	187	202	216	230	244	259	273
304	287	302	316	330	344	359	373	387	401	416
305	**430**	**444**	**458**	**473**	**487**	**501**	**515**	**530**	**544**	**558**
306	572	586	601	615	629	643	657	671	686	700
307	714	728	742	756	770	785	799	813	827	841
308	855	869	883	897	911	926	940	954	968	982
309	996	*010	*024	*038	*052	*066	*080	*094	*108	*122
310	**49 136**	**150**	**164**	**178**	**192**	**206**	**220**	**234**	**248**	**262**
311	276	290	304	318	332	346	360	374	388	402
312	415	429	443	457	471	485	499	513	527	541
313	554	568	582	596	610	624	638	651	665	679
314	693	707	721	734	748	762	776	790	803	817
315	**831**	**845**	**859**	**872**	**886**	**900**	**914**	**927**	**941**	**955**
316	969	982	996	*010	*024	*037	*051	*065	*079	*092
317	50 106	120	133	147	161	174	188	202	215	229
318	243	256	270	284	297	311	325	338	352	365
319	379	393	406	420	433	447	461	474	488	501
320	**515**	**529**	**542**	**556**	**569**	**583**	**596**	**610**	**623**	**637**
321	651	664	678	691	705	718	732	745	759	772
322	786	799	813	826	840	853	866	880	893	907
323	920	934	947	961	974	987	*001	*014	*028	*041
324	51 055	068	081	095	108	121	135	148	162	175
325	**188**	**202**	**215**	**228**	**242**	**255**	**268**	**282**	**295**	**308**
326	322	335	348	362	375	388	402	415	428	441
327	455	468	481	495	508	521	534	548	561	574
328	587	601	614	627	640	654	667	680	693	706
329	720	733	746	759	772	786	799	812	825	838
330	**851**	**865**	**878**	**891**	**904**	**917**	**930**	**943**	**957**	**970**
331	983	996	*009	*022	*035	*048	*061	*075	*088	*101
332	52 114	127	140	153	166	179	192	205	218	231
333	244	257	270	284	297	310	323	336	349	362
334	375	388	401	414	427	440	453	466	479	492
335	**504**	**517**	**530**	**543**	**556**	**569**	**582**	**595**	**608**	**621**
336	634	647	660	673	686	699	711	724	737	750
337	763	776	789	802	815	827	840	853	866	879
338	892	905	917	930	943	956	969	982	994	*007
339	53 020	033	046	058	071	084	097	110	122	135
340	**148**	**161**	**173**	**186**	**199**	**212**	**224**	**237**	**250**	**263**
341	275	288	301	314	326	339	352	364	377	390
342	403	415	428	441	453	466	479	491	504	517
343	529	542	555	567	580	593	605	618	631	643
344	656	668	681	694	706	719	732	744	757	769
345	**782**	**794**	**807**	**820**	**832**	**845**	**857**	**870**	**882**	**895**
346	908	920	933	945	958	970	983	995	*008	*020
347	54 033	045	058	070	083	095	108	120	133	145
348	158	170	183	195	208	220	233	245	258	270
349	283	295	307	320	332	345	357	370	382	394
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350	**54 407**	**419**	**432**	**444**	**456**	**469**	**481**	**494**	**506**	**518**	
351	531	543	555	568	580	593	605	617	630	642	
352	654	667	679	691	704	716	728	741	753	765	
353	777	790	802	814	827	839	851	864	876	888	
354	900	913	925	937	949	962	974	986	998	*011	
355	**55 023**	**035**	**047**	**060**	**072**	**084**	**096**	**108**	**121**	**133**	**13** 1 1.3 2 2.6 3 3.9 4 5.2 5 6.5 6 7.8 7 9.1 8 10.4 9 11.7
356	145	157	169	182	194	206	218	230	242	255	
357	267	279	291	303	315	328	340	352	364	376	
358	388	400	413	425	437	449	461	473	485	497	
359	509	522	534	546	558	570	582	594	606	618	
360	**630**	**642**	**654**	**666**	**678**	**691**	**703**	**715**	**727**	**739**	
361	751	763	775	787	799	811	823	835	847	859	
362	871	883	895	907	919	931	943	955	967	979	
363	991	*003	*015	*027	*038	*050	*062	*074	*086	*098	
364	56 110	122	134	146	158	170	182	194	205	217	
365	**229**	**241**	**253**	**265**	**277**	**289**	**301**	**312**	**324**	**336**	
366	348	360	372	384	396	407	419	431	443	455	**12** 1 1.2 2 2.4 3 3.6 4 4.8 5 6.0 6 7.2 7 8.4 8 9.6 9 10.8
367	467	478	490	502	514	526	538	549	561	573	
368	585	597	608	620	632	644	656	667	679	691	
369	703	714	726	738	750	761	773	785	797	808	
370	**820**	**832**	**844**	**855**	**867**	**879**	**891**	**902**	**914**	**926**	
371	937	949	961	972	984	996	*008	*019	*031	*043	
372	57 054	066	078	089	101	113	124	136	148	159	
373	171	183	194	206	217	229	241	252	264	276	
374	287	299	310	322	334	345	357	368	380	392	
375	**403**	**415**	**426**	**438**	**449**	**461**	**473**	**484**	**496**	**507**	
376	519	530	542	553	565	576	588	600	611	623	
377	634	646	657	669	680	692	703	715	726	738	**11** 1 1.1 2 2.2 3 3.3 4 4.4 5 5.5 6 6.6 7 7.7 8 8.8 9 9.9
378	749	761	772	784	795	807	818	830	841	852	
379	864	875	887	898	910	921	933	944	955	967	
380	**978**	**990**	***001**	***013**	***024**	***035**	***047**	***058**	***070**	***081**	
381	58 092	104	115	127	138	149	161	172	184	195	
382	206	218	229	240	252	263	274	286	297	309	
383	320	331	343	354	365	377	388	399	410	422	
384	433	444	456	467	478	490	501	512	524	535	
385	**546**	**557**	**569**	**580**	**591**	**602**	**614**	**625**	**636**	**647**	
386	659	670	681	692	704	715	726	737	749	760	
387	771	782	794	805	816	827	838	850	861	872	
388	883	894	906	917	928	939	950	961	973	984	**10** 1 1.0 2 2.0 3 3.0 4 4.0 5 5.0 6 6.0 7 7.0 8 8.0 9 9.0
389	995	*006	*017	*028	*040	*051	*062	*073	*084	*095	
390	**59 106**	**118**	**129**	**140**	**151**	**162**	**173**	**184**	**195**	**207**	
391	218	229	240	251	262	273	284	295	306	318	
392	329	340	351	362	373	384	395	406	417	428	
393	439	450	461	472	483	494	506	517	528	539	
394	550	561	572	583	594	605	616	627	638	649	
395	**660**	**671**	**682**	**693**	**704**	**715**	**726**	**737**	**748**	**759**	
396	770	780	791	802	813	824	835	846	857	868	
397	879	890	901	912	923	934	945	956	966	977	
398	988	999	*010	*021	*032	*043	*054	*065	*076	*086	
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400	**60 206**	**217**	**228**	**239**	**249**	**260**	**271**	**282**	**293**	**304**	
401	314	325	336	347	358	369	379	390	401	412	
402	423	433	444	455	466	477	487	498	509	520	
403	531	541	552	563	574	584	595	606	617	627	
404	638	649	660	670	681	692	703	713	724	735	
405	**746**	**756**	**767**	**778**	**788**	**799**	**810**	**821**	**831**	**842**	
406	853	863	874	885	895	906	917	927	938	949	
407	959	970	981	991	*002	*013	*023	*034	*045	*055	
408	61 066	077	087	098	109	119	130	140	151	162	**11** 1 | 1.1 2 | 2.2 3 | 3.3 4 | 4.4 5 | 5.5 6 | 6.6 7 | 7.7 8 | 8.8 9 | 9.9
409	172	183	194	204	215	225	236	247	257	268	
410	**278**	**289**	**300**	**310**	**321**	**331**	**342**	**352**	**363**	**374**	
411	384	395	405	416	426	437	448	458	469	479	
412	490	500	511	521	532	542	553	563	574	584	
413	595	606	616	627	637	648	658	669	679	690	
414	700	711	721	731	742	752	763	773	784	794	
415	**805**	**815**	**826**	**836**	**847**	**857**	**868**	**878**	**888**	**899**	
416	909	920	930	941	951	962	972	982	993	*003	
417	62 014	024	034	045	055	066	076	086	097	107	
418	118	128	138	149	159	170	180	190	201	211	
419	221	232	242	252	263	273	284	294	304	315	
420	**325**	**335**	**346**	**356**	**366**	**377**	**387**	**397**	**408**	**418**	
421	428	439	449	459	469	480	490	500	511	521	**10** 1 | 1.0 2 | 2.0 3 | 3.0 4 | 4.0 5 | 5.0 6 | 6.0 7 | 7.0 8 | 8.0 9 | 9.0
422	531	542	552	562	572	583	593	603	613	624	
423	634	644	655	665	675	685	696	706	716	726	
424	737	747	757	767	778	788	798	808	818	829	
425	**839**	**849**	**859**	**870**	**880**	**890**	**900**	**910**	**921**	**931**	
426	941	951	961	972	982	992	*002	*012	*022	*033	
427	63 043	053	063	073	083	094	104	114	124	134	
428	144	155	165	175	185	195	205	215	225	236	
429	246	256	266	276	286	296	306	317	327	337	
430	**347**	**357**	**367**	**377**	**387**	**397**	**407**	**417**	**428**	**438**	
431	448	458	468	478	488	498	508	518	528	538	
432	548	558	568	579	589	599	609	619	629	639	
433	649	659	669	679	689	699	709	719	729	739	
434	749	759	769	779	789	799	809	819	829	839	
435	**849**	**859**	**869**	**879**	**889**	**899**	**909**	**919**	**929**	**939**	**9** 1 | 0.9 2 | 1.8 3 | 2.7 4 | 3.6 5 | 4.5 6 | 5.4 7 | 6.3 8 | 7.2 9 | 8.1
436	949	959	969	979	988	998	*008	*018	*028	*038	
437	64 048	058	068	078	088	098	108	118	128	137	
438	147	157	167	177	187	197	207	217	227	237	
439	246	256	266	276	286	296	306	316	326	335	
440	**345**	**355**	**365**	**375**	**385**	**395**	**404**	**414**	**424**	**434**	
441	444	454	464	473	483	493	503	513	523	532	
442	542	552	562	572	582	591	601	611	621	631	
443	640	650	660	670	680	689	699	709	719	729	
444	738	748	758	768	777	787	797	807	816	826	
445	**836**	**846**	**856**	**865**	**875**	**885**	**895**	**904**	**914**	**924**	
446	933	943	953	963	972	982	992	*002	*011	*021	
447	65 031	040	050	060	070	079	089	099	108	118	
448	128	137	147	157	167	176	186	196	205	215	
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450	65 321	331	341	350	360	369	379	389	398	408	
451	418	427	437	447	456	466	475	485	495	504	
452	514	523	533	543	552	562	571	581	591	600	
453	610	619	629	639	648	658	667	677	686	696	
454	706	715	725	734	744	753	763	772	782	792	
455	801	811	820	830	839	849	858	868	877	887	
456	896	906	916	925	935	944	954	963	973	982	
457	992	*001	*011	*020	*030	*039	*049	*058	*068	*077	
458	66 087	096	106	115	124	134	143	153	162	172	10 1 1.0 2 2.0 3 3.0 4 4.0 5 5.0 6 6.0 7 7.0 8 8.0 9 9.0
459	181	191	200	210	219	229	238	247	257	266	
460	276	285	295	304	314	323	332	342	351	361	
461	370	380	389	398	408	417	427	436	445	455	
462	464	474	483	492	502	511	521	530	539	549	
463	558	567	577	586	596	605	614	624	633	642	
464	652	661	671	680	689	699	708	717	727	736	
465	745	755	764	773	783	792	801	811	820	829	
466	839	848	857	867	876	885	894	904	913	922	
467	932	941	950	960	969	978	987	997	*006	*015	
468	67 025	034	043	052	062	071	080	089	099	108	
469	117	127	136	145	154	164	173	182	191	201	
470	210	219	228	237	247	256	265	274	284	293	
471	302	311	321	330	339	348	357	367	376	385	9 1 0.9 2 1.8 3 2.7 4 3.6 5 4.5 6 5.4 7 6.3 8 7.2 9 8.1
472	394	403	413	422	431	440	449	459	468	477	
473	486	495	504	514	523	532	541	550	560	569	
474	578	587	596	605	614	624	633	642	651	660	
475	669	679	688	697	706	715	724	733	742	752	
476	761	770	779	788	797	806	815	825	834	843	
477	852	861	870	879	888	897	906	916	925	934	
478	943	952	961	970	979	988	997	*006	*015	*024	
479	68 034	043	052	061	070	079	088	097	106	115	
480	124	133	142	151	160	169	178	187	196	205	
481	215	224	233	242	251	260	269	278	287	296	
482	305	314	323	332	341	350	359	368	377	386	
483	395	404	413	422	431	440	449	458	467	476	
484	485	494	502	511	520	529	538	547	556	565	
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486	664	673	681	690	699	708	717	726	735	744	
487	753	762	771	780	789	797	806	815	824	833	
488	842	851	860	869	878	886	895	904	913	922	
489	931	940	949	958	966	975	984	993	*002	*011	
490	69 020	028	037	046	055	064	073	082	090	099	
491	108	117	126	135	144	152	161	170	179	188	
492	197	205	214	223	232	241	249	258	267	276	
493	285	294	302	311	320	329	338	346	355	364	
494	373	381	390	399	408	417	425	434	443	452	
495	461	469	478	487	496	504	513	522	531	539	
496	548	557	566	574	583	592	601	609	618	627	
497	636	644	653	662	671	679	688	697	705	714	
498	723	732	740	749	758	767	775	784	793	801	
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502	70 070	079	088	096	105	114	122	131	140	148
503	157	165	174	183	191	200	209	217	226	234
504	243	252	260	269	278	286	295	303	312	321
505	329	338	346	355	364	372	381	389	398	406
506	415	424	432	441	449	458	467	475	484	492
507	501	509	518	526	535	544	552	561	569	578
508	586	595	603	612	621	629	638	646	655	663
509	672	680	689	697	706	714	723	731	740	749
510	757	766	774	783	791	800	808	817	825	834
511	842	851	859	868	876	885	893	902	910	919
512	927	935	944	952	961	969	978	986	995	*003
513	71 012	020	029	037	046	054	063	071	079	088
514	096	105	113	122	130	139	147	155	164	172
515	181	189	198	206	214	223	231	240	248	257
516	265	273	282	290	299	307	315	324	332	341
517	349	357	366	374	383	391	399	408	416	425
518	433	441	450	458	466	475	483	492	500	508
519	517	525	533	542	550	559	567	575	584	592
520	600	609	617	625	634	642	650	659	667	675
521	684	692	700	709	717	725	734	742	750	759
522	767	775	784	792	800	809	817	825	834	842
523	850	858	867	875	883	892	900	908	917	925
524	933	941	950	958	966	975	983	991	999	*008
525	72 016	024	032	041	049	057	066	074	082	090
526	099	107	115	123	132	140	148	156	165	173
527	181	189	198	206	214	222	230	239	247	255
528	263	272	280	288	296	304	313	321	329	337
529	346	354	362	370	378	387	395	403	411	419
530	428	436	444	452	460	469	477	485	493	501
531	509	518	526	534	542	550	558	567	575	583
532	591	599	607	616	624	632	640	648	656	665
533	673	681	689	697	705	713	722	730	738	746
534	754	762	770	779	787	795	803	811	819	827
535	835	843	852	860	868	876	884	892	900	908
536	916	925	933	941	949	957	965	973	981	989
537	997	*006	*014	*022	*030	*038	*046	*054	*062	*070
538	73 078	086	094	102	111	119	127	135	143	151
539	159	167	175	183	191	199	207	215	223	231
540	239	247	255	263	272	280	288	296	304	312
541	320	328	336	344	352	360	368	376	384	392
542	400	408	416	424	432	440	448	456	464	472
543	480	488	496	504	512	520	528	536	544	552
544	560	568	576	584	592	600	608	616	624	632
545	640	648	656	664	672	679	687	695	703	711
546	719	727	735	743	751	759	767	775	783	791
547	799	807	815	823	830	838	846	854	862	870
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550	**74 036**	**044**	**052**	**060**	**068**	**076**	**084**	**092**	**099**	**107**	
551	115	123	131	139	147	155	162	170	178	186	
552	194	202	210	218	225	233	241	249	257	265	
553	273	280	288	296	304	312	320	327	335	343	
554	351	359	367	374	382	390	398	406	414	421	
555	**429**	**437**	**445**	**453**	**461**	**468**	**476**	**484**	**492**	**500**	
556	507	515	523	531	539	547	554	562	570	578	
557	586	593	601	609	617	624	632	640	648	656	
558	663	671	679	687	695	702	710	718	726	733	
559	741	749	757	764	772	780	788	796	803	811	
560	**819**	**827**	**834**	**842**	**850**	**858**	**865**	**873**	**881**	**889**	
561	896	904	912	920	927	935	943	950	958	966	
562	974	981	989	997	*005	*012	*020	*028	*035	*043	**8** 1 0.8 2 1.6 3 2.4 4 3.2 5 4.0 6 4.8 7 5.6 8 6.4 9 7.2
563	75 051	059	066	074	082	089	097	105	113	120	
564	128	136	143	151	159	166	174	182	189	197	
565	**205**	**213**	**220**	**228**	**236**	**243**	**251**	**259**	**266**	**274**	
566	282	289	297	305	312	320	328	335	343	351	
567	358	366	374	381	389	397	404	412	420	427	
568	435	442	450	458	465	473	481	488	496	504	
569	511	519	526	534	542	549	557	565	572	580	
570	**587**	**595**	**603**	**610**	**618**	**626**	**633**	**641**	**648**	**656**	
571	664	671	679	686	694	702	709	717	724	732	
572	740	747	755	762	770	778	785	793	800	808	
573	815	823	831	838	846	853	861	868	876	884	
574	891	899	906	914	921	929	937	944	952	959	
575	**967**	**974**	**982**	**989**	**997**	***005**	***012**	***020**	***027**	***035**	
576	76 042	050	057	065	072	080	087	095	103	110	
577	118	125	133	140	148	155	163	170	178	185	
578	193	200	208	215	223	230	238	245	253	260	
579	268	275	283	290	298	305	313	320	328	335	
580	**343**	**350**	**358**	**365**	**373**	**380**	**388**	**395**	**403**	**410**	**7** 1 0.7 2 1.4 3 2.1 4 2.8 5 3.5 6 4.2 7 4.9 8 5.6 9 6.3
581	418	425	433	440	448	455	462	470	477	485	
582	492	500	507	515	522	530	537	545	552	559	
583	567	574	582	589	597	604	612	619	626	634	
584	641	649	656	664	671	678	686	693	701	708	
585	**716**	**723**	**730**	**738**	**745**	**753**	**760**	**768**	**775**	**782**	
586	790	797	805	812	819	827	834	842	849	856	
587	864	871	879	886	893	901	908	916	923	930	
588	938	945	953	960	967	975	982	989	997	*004	
589	77 012	019	026	034	041	048	056	063	070	078	
590	**085**	**093**	**100**	**107**	**115**	**122**	**129**	**137**	**144**	**151**	
591	159	166	173	181	188	195	203	210	217	225	
592	232	240	247	254	262	269	276	283	291	298	
593	305	313	320	327	335	342	349	357	364	371	
594	379	386	393	401	408	415	422	430	437	444	
595	**452**	**459**	**466**	**474**	**481**	**488**	**495**	**503**	**510**	**517**	
596	525	532	539	546	554	561	568	576	583	590	
597	597	605	612	619	627	634	641	648	656	663	
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602	960	967	974	981	988	996	*003	*010	*017	*025	
603	78 032	039	046	053	061	068	075	082	089	097	
604	104	111	118	125	132	140	147	154	161	168	
605	176	183	190	197	204	211	219	226	233	240	
606	247	254	262	269	276	283	290	297	305	312	
607	319	326	333	340	347	355	362	369	376	383	
608	390	398	405	412	419	426	433	440	447	455	8 1 0.8 2 1.6 3 2.4 4 3.2 5 4.0 6 4.8 7 5.6 8 6.4 9 7.2
609	462	469	476	483	490	497	504	512	519	526	
610	533	540	547	554	561	569	576	583	590	597	
611	604	611	618	625	633	640	647	654	661	668	
612	675	682	689	696	704	711	718	725	732	739	
613	746	753	760	767	774	781	789	796	803	810	
614	817	824	831	838	845	852	859	866	873	880	
615	888	895	902	909	916	923	930	937	944	951	
616	958	965	972	979	986	993	*000	*007	*014	*021	
617	79 029	036	043	050	057	064	071	078	085	092	
618	099	106	113	120	127	134	141	148	155	162	
619	169	176	183	190	197	204	211	218	225	232	
620	239	246	253	260	267	274	281	288	295	302	
621	309	316	323	330	337	344	351	358	365	372	
622	379	386	393	400	407	414	421	428	435	442	7 1 0.7 2 1.4 3 2.1 4 2.8 5 3.5 6 4.2 7 4.9 8 5.6 9 6.3
623	449	456	463	470	477	484	491	498	505	511	
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625	588	595	602	609	616	623	630	637	644	650	
626	657	664	671	678	685	692	699	706	713	720	
627	727	734	741	748	754	761	768	775	782	789	
628	796	803	810	817	824	831	837	844	851	858	
629	865	872	879	886	893	900	906	913	920	927	
630	934	941	948	955	962	969	975	982	989	996	
631	80 003	010	017	024	030	037	044	051	058	065	
632	072	079	085	092	099	106	113	120	127	134	
633	140	147	154	161	168	175	182	188	195	202	
634	209	216	223	229	236	243	250	257	264	271	
635	277	284	291	298	305	312	318	325	332	339	
636	346	353	359	366	373	380	387	393	400	407	6 1 0.6 2 1.2 3 1.8 4 2.4 5 3.0 6 3.6 7 4.2 8 4.8 9 5.4
637	414	421	428	434	441	448	455	462	468	475	
638	482	489	496	502	509	516	523	530	536	543	
639	550	557	564	570	577	584	591	598	604	611	
640	618	625	632	638	645	652	659	665	672	679	
641	686	693	699	706	713	720	726	733	740	747	
642	754	760	767	774	781	787	794	801	808	814	
643	821	828	835	841	848	855	862	868	875	882	
644	889	895	902	909	916	922	929	936	943	949	
645	956	963	969	976	983	990	996	*003	*010	*017	
646	81 023	030	037	043	050	057	064	070	077	084	
647	090	097	104	111	117	124	131	137	144	151	
648	158	164	171	178	184	191	198	204	211	218	
649	224	231	238	245	251	258	265	271	278	285	
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650	**81 291**	**298**	**305**	**311**	**318**	**325**	**331**	**338**	**345**	**351**	
651	358	365	371	378	385	391	398	405	411	418	
652	425	431	438	445	451	458	465	471	478	485	
653	491	498	505	511	518	525	531	538	544	551	
654	558	564	571	578	584	591	598	604	611	617	
655	**624**	**631**	**637**	**644**	**651**	**657**	**664**	**671**	**677**	**684**	
656	690	697	704	710	717	723	730	737	743	750	
657	757	763	770	776	783	790	796	803	809	816	
658	823	829	836	842	849	856	862	869	875	882	
659	889	895	902	908	915	921	928	935	941	948	
660	**954**	**961**	**968**	**974**	**981**	**987**	**994**	***000**	***007**	***014**	
661	82 020	027	033	040	046	053	060	066	073	079	
662	086	092	099	105	112	119	125	132	138	145	7 1 0.7 2 1.4 3 2.1 4 2.8 5 3.5 6 4.2 7 4.9 8 5.6 9 6.3
663	151	158	164	171	178	184	191	197	204	210	
664	217	223	230	236	243	249	256	263	269	276	
665	**282**	**289**	**295**	**302**	**308**	**315**	**321**	**328**	**334**	**341**	
666	347	354	360	367	373	380	387	393	400	406	
667	413	419	426	432	439	445	452	458	465	471	
668	478	484	491	497	504	510	517	523	530	536	
669	543	549	556	562	569	575	582	588	595	601	
670	**607**	**614**	**620**	**627**	**633**	**640**	**646**	**653**	**659**	**666**	
671	672	679	685	692	698	705	711	718	724	730	
672	737	743	750	756	763	769	776	782	789	795	
673	802	808	814	821	827	834	840	847	853	860	
674	866	872	879	885	892	898	905	911	918	924	
675	**930**	**937**	**943**	**950**	**956**	**963**	**969**	**975**	**982**	**988**	
676	995	*001	*008	*014	*020	*027	*033	*040	*046	*052	
677	83 059	065	072	078	085	091	097	104	110	117	
678	123	129	136	142	149	155	161	168	174	181	
679	187	193	200	206	213	219	225	232	238	245	
680	**251**	**257**	**264**	**270**	**276**	**283**	**289**	**296**	**302**	**308**	6 1 0.6 2 1.2 3 1.8 4 2.4 5 3.0 6 3.6 7 4.2 8 4.8 9 5.4
681	315	321	327	334	340	347	353	359	366	372	
682	378	385	391	398	404	410	417	423	429	436	
683	442	448	455	461	467	474	480	487	493	499	
684	506	512	518	525	531	537	544	550	556	563	
685	**569**	**575**	**582**	**588**	**594**	**601**	**607**	**613**	**620**	**626**	
686	632	639	645	651	658	664	670	677	683	689	
687	696	702	708	715	721	727	734	740	746	753	
688	759	765	771	778	784	790	797	803	809	816	
689	822	828	835	841	847	853	860	866	872	879	
690	**885**	**891**	**897**	**904**	**910**	**916**	**923**	**929**	**935**	**942**	
691	948	954	960	967	973	979	985	992	998	*004	
692	84 011	017	023	029	036	042	048	055	061	067	
693	073	080	086	092	098	105	111	117	123	130	
694	136	142	148	155	161	167	173	180	186	192	
695	**198**	**205**	**211**	**217**	**223**	**230**	**236**	**242**	**248**	**255**	
696	261	267	273	280	286	292	298	305	311	317	
697	323	330	336	342	348	354	361	367	373	379	
698	386	392	398	404	410	417	423	429	435	442	
699	448	454	460	466	473	479	485	491	497	504	
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700	84 510	516	522	528	535	541	547	553	559	566	
701	572	578	584	590	597	603	609	615	621	628	
702	634	640	646	652	658	665	671	677	683	689	
703	696	702	708	714	720	726	733	739	745	751	
704	757	763	770	776	782	788	794	800	807	813	
705	819	825	831	837	844	850	856	862	868	874	
706	880	887	893	899	905	911	917	924	930	936	
707	942	948	954	960	967	973	979	985	991	997	
708	85 003	009	016	022	028	034	040	046	052	058	7 1 0.7 2 1.4 3 2.1 4 2.8 5 3.5 6 4.2 7 4.9 8 5.6 9 6.3
709	065	071	077	083	089	095	101	107	114	120	
710	126	132	138	144	150	156	163	169	175	181	
711	187	193	199	205	211	217	224	230	236	242	
712	248	254	260	266	272	278	285	291	297	303	
713	309	315	321	327	333	339	345	352	358	364	
714	370	376	382	388	394	400	406	412	418	425	
715	431	437	443	449	455	461	467	473	479	485	
716	491	497	503	509	516	522	528	534	540	546	
717	552	558	564	570	576	582	588	594	600	606	
718	612	618	625	631	637	643	649	655	661	667	
719	673	679	685	691	697	703	709	715	721	727	
720	733	739	745	751	757	763	769	775	781	788	
721	794	800	806	812	818	824	830	836	842	848	
722	854	860	866	872	878	884	890	896	902	908	6 1 0.6 2 1.2 3 1.8 4 2.4 5 3.0 6 3.6 7 4.2 8 4.8 9 5.4
723	914	920	926	932	938	944	950	956	962	968	
724	974	980	986	992	998	*004	*010	*016	*022	*028	
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726	094	100	106	112	118	124	130	136	141	147	
727	153	159	165	171	177	183	189	195	201	207	
728	213	219	225	231	237	243	249	255	261	267	
729	273	279	285	291	297	303	308	314	320	326	
730	332	338	344	350	356	362	368	374	380	386	
731	392	398	404	410	415	421	427	433	439	445	
732	451	457	463	469	475	481	487	493	499	504	
733	510	516	522	528	534	540	546	552	558	564	
734	570	576	581	587	593	599	605	611	617	623	
735	629	635	641	646	652	658	664	670	676	682	
736	688	694	700	705	711	717	723	729	735	741	5 1 0.5 2 1.0 3 1.5 4 2.0 5 2.5 6 3.0 7 3.5 8 4.0 9 4.5
737	747	753	759	764	770	776	782	788	794	800	
738	806	812	817	823	829	835	841	847	853	859	
739	864	870	876	882	888	894	900	906	911	917	
740	923	929	935	941	947	953	958	964	970	976	
741	982	988	994	999	*005	*011	*017	*023	*029	*035	
742	87 040	046	052	058	064	070	075	081	087	093	
743	099	105	111	116	122	128	134	140	146	151	
744	157	163	169	175	181	186	192	198	204	210	
745	216	221	227	233	239	245	251	256	262	268	
746	274	280	286	291	297	303	309	315	320	326	
747	332	338	344	349	355	361	367	373	379	384	
748	390	396	402	408	413	419	425	431	437	442	
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752	622	628	633	639	645	651	656	662	668	674	
753	679	685	691	697	703	708	714	720	726	731	
754	737	743	749	754	760	766	772	777	783	789	
755	795	800	806	812	818	823	829	835	841	846	
756	852	858	864	869	875	881	887	892	898	904	
757	910	915	921	927	933	938	944	950	955	961	
758	967	973	978	984	990	996	*001	*007	*013	*018	
759	88 024	030	036	041	047	053	058	064	070	076	
760	081	087	093	098	104	110	116	121	127	133	
761	138	144	150	156	161	167	173	178	184	190	
762	195	201	207	213	218	224	230	235	241	247	6
763	252	258	264	270	275	281	287	292	298	304	1 0.6 2 1.2 3 1.8 4 2.4 5 3.0 6 3.6 7 4.2 8 4.8 9 5.4
764	309	315	321	326	332	338	343	349	355	360	
765	366	372	377	383	389	395	400	406	412	417	
766	423	429	434	440	446	451	457	463	468	474	
767	480	485	491	497	502	508	513	519	525	530	
768	536	542	547	553	559	564	570	576	581	587	
769	593	598	604	610	615	621	627	632	638	643	
770	649	655	660	666	672	677	683	689	694	700	
771	705	711	717	722	728	734	739	745	750	756	
772	762	767	773	779	784	790	795	801	807	812	
773	818	824	829	835	840	846	852	857	863	868	
774	874	880	885	891	897	902	908	913	919	925	
775	930	936	941	947	953	958	964	969	975	981	
776	986	992	997	*003	*009	*014	*020	*025	*031	*037	
777	89 042	048	053	059	064	070	076	081	087	092	
778	098	104	109	115	120	126	131	137	143	148	
779	154	159	165	170	176	182	187	193	198	204	
780	209	215	221	226	232	237	243	248	254	260	5
781	265	271	276	282	287	293	298	304	310	315	1 0.5 2 1.0 3 1.5 4 2.0 5 2.5 6 3.0 7 3.5 8 4.0 9 4.5
782	321	326	332	337	343	348	354	360	365	371	
783	376	382	387	393	398	404	409	415	421	426	
784	432	437	443	448	454	459	465	470	476	481	
785	487	492	498	504	509	515	520	526	531	537	
786	542	548	553	559	564	570	575	581	586	592	
787	597	603	609	614	620	625	631	636	642	647	
788	653	658	664	669	675	680	686	691	697	702	
789	708	713	719	724	730	735	741	746	752	757	
790	763	768	774	779	785	790	796	801	807	812	
791	818	823	829	834	840	845	851	856	862	867	
792	873	878	883	889	894	900	905	911	916	922	
793	927	933	938	944	949	955	960	966	971	977	
794	982	988	993	998	*004	*009	*015	*020	*026	*031	
795	90 037	042	048	053	059	064	069	075	080	086	
796	091	097	102	108	113	119	124	129	135	140	
797	146	151	157	162	168	173	179	184	189	195	
798	200	206	211	217	222	227	233	238	244	249	
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800	90 309	314	320	325	331	336	342	347	352	358	
801	363	369	374	380	385	390	396	401	407	412	
802	417	423	428	434	439	445	450	455	461	466	
803	472	477	482	488	493	499	504	509	515	520	
804	526	531	536	542	547	553	558	563	569	574	
805	580	585	590	596	601	607	612	617	623	628	
806	634	639	644	650	655	660	666	671	677	682	
807	687	693	698	703	709	714	720	725	730	736	
808	741	747	752	757	763	768	773	779	784	789	
809	795	800	806	811	816	822	827	832	838	843	
810	849	854	859	865	870	875	881	886	891	897	
811	902	907	913	918	924	929	934	940	945	950	
812	956	961	966	972	977	982	988	993	998	*004	6 1 | 0.6 2 | 1.2 3 | 1.8 4 | 2.4 5 | 3.0 6 | 3.6 7 | 4.2 8 | 4.8 9 | 5.4
813	91 009	014	020	025	030	036	041	046	052	057	
814	062	068	073	078	084	089	094	100	105	110	
815	116	121	126	132	137	142	148	153	158	164	
816	169	174	180	185	190	196	201	206	212	217	
817	222	228	233	238	243	249	254	259	265	270	
818	275	281	286	291	297	302	307	312	318	323	
819	328	334	339	344	350	355	360	365	371	376	
820	381	387	392	397	403	408	413	418	424	429	
821	434	440	445	450	455	461	466	471	477	482	
822	487	492	498	503	508	514	519	524	529	535	
823	540	545	551	556	561	566	572	577	582	587	
824	593	598	603	609	614	619	624	630	635	640	
825	645	651	656	661	666	672	677	682	687	693	
826	698	703	709	714	719	724	730	735	740	745	
827	751	756	761	766	772	777	782	787	793	798	
828	803	808	814	819	824	829	834	840	845	850	
829	855	861	866	871	876	882	887	892	897	903	
830	908	913	918	924	929	934	939	944	950	955	
831	960	965	971	976	981	986	991	997	*002	*007	5 1 | 0.5 2 | 1.0 3 | 1.5 4 | 2.0 5 | 2.5 6 | 3.0 7 | 3.5 8 | 4.0 9 | 4.5
832	92 012	018	023	028	033	038	044	049	054	059	
833	065	070	075	080	085	091	096	101	106	111	
834	117	122	127	132	137	143	148	153	158	163	
835	169	174	179	184	189	195	200	205	210	215	
836	221	226	231	236	241	247	252	257	262	267	
837	273	278	283	288	293	298	304	309	314	319	
838	324	330	335	340	345	350	355	361	366	371	
839	376	381	387	392	397	402	407	412	418	423	
840	428	433	438	443	449	454	459	464	469	474	
841	480	485	490	495	500	505	511	516	521	526	
842	531	536	542	547	552	557	562	567	572	578	
843	583	588	593	598	603	609	614	619	624	629	
844	634	639	645	650	655	660	665	670	675	681	
845	686	691	696	701	706	711	716	722	727	732	
846	737	742	747	752	758	763	768	773	778	783	
847	788	793	799	804	809	814	819	824	829	834	
848	840	845	850	855	860	865	870	875	881	886	
849	891	896	901	906	911	916	921	927	932	937	
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850	**92 942**	**947**	**952**	**957**	**962**	**967**	**973**	**978**	**983**	**988**	
851	993	998	*003	*008	*013	*018	*024	*029	*034	*039	
852	93 044	049	054	059	064	069	075	080	085	090	
853	095	100	105	110	115	120	125	131	136	141	
854	146	151	156	161	166	171	176	181	186	192	
855	**197**	**202**	**207**	**212**	**217**	**222**	**227**	**232**	**237**	**242**	
856	247	252	258	263	268	273	278	283	288	293	
857	298	303	308	313	318	323	328	334	339	344	
858	349	354	359	364	369	374	379	384	389	394	**6** 1 | 0.6 2 | 1.2 3 | 1.8 4 | 2.4 5 | 3.0 6 | 3.6 7 | 4.2 8 | 4.8 9 | 5.4
859	399	404	409	414	420	425	430	435	440	445	
860	**450**	**455**	**460**	**465**	**470**	**475**	**480**	**485**	**490**	**495**	
861	500	505	510	515	520	526	531	536	541	546	
862	551	556	561	566	571	576	581	586	591	596	
863	601	606	611	616	621	626	631	636	641	646	
864	651	656	661	666	671	676	682	687	692	697	
865	**702**	**707**	**712**	**717**	**722**	**727**	**732**	**737**	**742**	**747**	
866	752	757	762	767	772	777	782	787	792	797	
867	802	807	812	817	822	827	832	837	842	847	
868	852	857	862	867	872	877	882	887	892	897	
869	902	907	912	917	922	927	932	937	942	947	
870	**952**	**957**	**962**	**967**	**972**	**977**	**982**	**987**	**992**	**997**	
871	94 002	007	012	017	022	027	032	037	042	047	**5** 1 | 0.5 2 | 1.0 3 | 1.5 4 | 2.0 5 | 2.5 6 | 3.0 7 | 3.5 8 | 4.0 9 | 4.5
872	052	057	062	067	072	077	082	086	091	096	
873	101	106	111	116	121	126	131	136	141	146	
874	151	156	161	166	171	176	181	186	191	196	
875	**201**	**206**	**211**	**216**	**221**	**226**	**231**	**236**	**240**	**245**	
876	250	255	260	265	270	275	280	285	290	295	
877	300	305	310	315	320	325	330	335	340	345	
878	349	354	359	364	369	374	379	384	389	394	
879	399	404	409	414	419	424	429	433	438	443	
880	**448**	**453**	**458**	**463**	**468**	**473**	**478**	**483**	**488**	**493**	
881	498	503	507	512	517	522	527	532	537	542	
882	547	552	557	562	567	571	576	581	586	591	
883	596	601	606	611	616	621	626	630	635	640	
884	645	650	655	660	665	670	675	680	685	689	
885	**694**	**699**	**704**	**709**	**714**	**719**	**724**	**729**	**734**	**738**	**4** 1 | 0.4 2 | 0.8 3 | 1.2 4 | 1.6 5 | 2.0 6 | 2.4 7 | 2.8 8 | 3.2 9 | 3.6
886	743	748	753	758	763	768	773	778	783	787	
887	792	797	802	807	812	817	822	827	832	836	
888	841	846	851	856	861	866	871	876	880	885	
889	890	895	900	905	910	915	919	924	929	934	
890	**939**	**944**	**949**	**954**	**959**	**963**	**968**	**973**	**978**	**983**	
891	988	993	998	*002	*007	*012	*017	*022	*027	*032	
892	95 036	041	046	051	056	061	066	071	075	080	
893	085	090	095	100	105	109	114	119	124	129	
894	134	139	143	148	153	158	163	168	173	177	
895	**182**	**187**	**192**	**197**	**202**	**207**	**211**	**216**	**221**	**226**	
896	231	236	240	245	250	255	260	265	270	274	
897	279	284	289	294	299	303	308	313	318	323	
898	328	332	337	342	347	352	357	361	366	371	
899	376	381	386	390	395	400	405	410	415	419	
N.	L. 0	1	2	3	4	5	6	7	8	9	PP.

N.	L. 0	1	2	3	4	5	6	7	8	9	PP.
900	95 424	429	434	439	444	448	453	458	463	468	
901	472	477	482	487	492	497	501	506	511	516	
902	521	525	530	535	540	545	550	554	559	564	
903	569	574	578	583	588	593	598	602	607	612	
904	617	622	626	631	636	641	646	650	655	660	
905	665	670	674	679	684	689	694	698	703	708	
906	713	718	722	727	732	737	742	746	751	756	
907	761	766	770	775	780	785	789	794	799	804	
908	809	813	818	823	828	832	837	842	847	852	
909	856	861	866	871	875	880	885	890	895	899	
910	904	909	914	918	923	928	933	938	942	947	
911	952	957	961	966	971	976	980	985	990	995	
912	999	*004	*009	*014	*019	*023	*028	*033	*038	*042	5
913	96 047	052	057	061	066	071	076	080	085	090	1 0.5 2 1.0
914	095	099	104	109	114	118	123	128	133	137	3 1.5
915	142	147	152	156	161	166	171	175	180	185	4 2.0
916	190	194	199	204	209	213	218	223	227	232	5 2.5 6 3.0
917	237	242	246	251	256	261	265	270	275	280	7 3.5
918	284	289	294	298	303	308	313	317	322	327	8 4.0
919	332	336	341	346	350	355	360	365	369	374	9 4.5
920	379	384	388	393	398	402	407	412	417	421	
921	426	431	435	440	445	450	454	459	464	468	
922	473	478	483	487	492	497	501	506	511	515	
923	520	525	530	534	539	544	548	553	558	562	
924	567	572	577	581	586	591	595	600	605	609	
925	614	619	624	628	633	638	642	647	652	656	
926	661	666	670	675	680	685	689	694	699	703	
927	708	713	717	722	727	731	736	741	745	750	
928	755	759	764	769	774	778	783	788	792	797	
929	802	806	811	816	820	825	830	834	839	844	
930	848	853	858	862	867	872	876	881	886	890	
931	895	900	904	909	914	918	923	928	932	937	4
932	942	946	951	956	960	965	970	974	979	984	1 0.4 2 0.8
933	988	993	997	*002	*007	*011	*016	*021	*025	*030	3 1.2
934	97 035	039	044	049	053	058	063	067	072	077	4 1.6
935	081	086	090	095	100	104	109	114	118	123	5 2.0 6 2.4
936	128	132	137	142	146	151	155	160	165	169	7 2.8
937	174	179	183	188	192	197	202	206	211	216	8 3.2
938	220	225	230	234	239	243	248	253	257	262	9 3.6
939	267	271	276	280	285	290	294	299	304	308	
940	313	317	322	327	331	336	340	345	350	354	
941	359	364	368	373	377	382	387	391	396	400	
942	405	410	414	419	424	428	433	437	442	447	
943	451	456	460	465	470	474	479	483	488	493	
944	497	502	506	511	516	520	525	529	534	539	
945	543	548	552	557	562	566	571	575	580	585	
946	589	594	598	603	607	612	617	621	626	630	
947	635	640	644	649	653	658	663	667	672	676	
948	681	685	690	695	699	704	708	713	717	722	
949	727	731	736	740	745	749	754	759	763	768	
N.	L. 0	1	2	3	4	5	6	7	8	9	PP.

N.	L. 0	1	2	3	4	5	6	7	8	9	PP.
950	**97 772**	**777**	**782**	**786**	**791**	**795**	**800**	**804**	**809**	**813**	
951	818	823	827	832	836	841	845	850	855	859	
952	864	868	873	877	882	886	891	896	900	905	
953	909	914	918	923	928	932	937	941	946	950	
954	955	959	964	968	973	978	982	987	991	996	
955	**98 000**	**005**	**009**	**014**	**019**	**023**	**028**	**032**	**037**	**041**	
956	046	050	055	059	064	068	073	078	082	087	
957	091	096	100	105	109	114	118	123	127	132	
958	137	141	146	150	155	159	164	168	173	177	
959	182	186	191	195	200	204	209	214	218	223	
960	**227**	**232**	**236**	**241**	**245**	**250**	**254**	**259**	**263**	**268**	
961	272	277	281	286	290	295	299	304	308	313	
962	318	322	327	331	336	340	345	349	354	358	**5** 1 0.5 2 1.0 3 1.5 4 2.0 5 2.5 6 3.0 7 3.5 8 4.0 9 4.5
963	363	367	372	376	381	385	390	394	399	403	
964	408	412	417	421	426	430	435	439	444	448	
965	**453**	**457**	**462**	**466**	**471**	**475**	**480**	**484**	**489**	**493**	
966	498	502	507	511	516	520	525	529	534	538	
967	543	547	552	556	561	565	570	574	579	583	
968	588	592	597	601	605	610	614	619	623	628	
969	632	637	641	646	650	655	659	664	668	673	
970	**677**	**682**	**686**	**691**	**695**	**700**	**704**	**709**	**713**	**717**	
971	722	726	731	735	740	744	749	753	758	762	
972	767	771	776	780	784	789	793	798	802	807	
973	811	816	820	825	829	834	838	843	847	851	
974	856	860	865	869	874	878	883	887	892	896	
975	**900**	**905**	**909**	**914**	**918**	**923**	**927**	**932**	**936**	**941**	
976	945	949	954	958	963	967	972	976	981	985	
977	989	994	998	*003	*007	*012	*016	*021	*025	*029	
978	99 034	038	043	047	052	056	061	065	069	074	
979	078	083	087	092	096	100	105	109	114	118	
980	**123**	**127**	**131**	**136**	**140**	**145**	**149**	**154**	**158**	**162**	
981	167	171	176	180	185	189	193	198	202	207	**4** 1 0.4 2 0.8 3 1.2 4 1.6 5 2.0 6 2.4 7 2.8 8 3.2 9 3.6
982	211	216	220	224	229	233	238	242	247	251	
983	255	260	264	269	273	277	282	286	291	295	
984	300	304	308	313	317	322	326	330	335	339	
985	**344**	**348**	**352**	**357**	**361**	**366**	**370**	**374**	**379**	**383**	
986	388	392	396	401	405	410	414	419	423	427	
987	432	436	441	445	449	454	458	463	467	471	
988	476	480	484	489	493	498	502	506	511	515	
989	520	524	528	533	537	542	546	550	555	559	
990	**564**	**568**	**572**	**577**	**581**	**585**	**590**	**594**	**599**	**603**	
991	607	612	616	621	625	629	634	638	642	647	
992	651	656	660	664	669	673	677	682	686	691	
993	695	699	704	708	712	717	721	726	730	734	
994	739	743	747	752	756	760	765	769	774	778	
995	**782**	**787**	**791**	**795**	**800**	**804**	**808**	**813**	**817**	**822**	
996	826	830	835	839	843	848	852	856	861	865	
997	870	874	878	883	887	891	896	900	904	909	
998	913	917	922	926	930	935	939	944	948	952	
999	957	961	965	970	974	978	983	987	991	996	
N.	L. 0	1	2	3	4	5	6	7	8	9	PP.

TABLE

of

LOGARITHMS

of the

Sine and Tangent

Varying by

Ten Seconds from 0° to 3°

and of the

Cosine and Cotangent

Varying by

Ten Seconds from 87° to 90°

Note. 1—As an inspection of the following pages will show, tables of proportional parts for seconds are given for the part from 1° to 3° only. For calculations, closer than to 10 seconds, with angles between 0° and 1°, the columns headed "Sec." "S" and "T." on page 30 and 31 are provided. See page 28 for their application.

Note 2.—For angles between 87° and 90° read from bottom of page upward.

L. Sine 0°

′	0″	10″	20″	30″	40″	50″	60″	
0	....	5.68557	5.98660	6.16270	6.28763	6.38454	6.46373	59
1	6.46373	6.53067	6.58866	6.63982	6.68557	6.72697	6.76476	58
2	6.76476	6.79952	6.83170	6.86167	6.88969	6.91602	6.94085	57
3	6.94085	6.96433	6.98660	7.00779	7.02800	7.04730	7.06579	56
4	7.06579	7.08351	7.10055	7.11694	7.13273	7.14797	7.16270	55
5	7.16270	7.17694	7.19072	7.20409	7.21705	7.22964	7.24188	54
6	7.24188	7.25378	7.26536	7.27664	7.28763	7.29836	7.30882	53
7	7.30882	7.31904	7.32903	7.33879	7.34833	7.35767	7.36682	52
8	7.36682	7.37577	7.38454	7.39314	7.40158	7.40985	7.41797	51
9	7.41797	7.42594	7.43376	7.44145	7.44900	7.45643	7.46373	50
10	7.46373	7.47090	7.47797	7.48491	7.49175	7.49849	7.50512	49
11	7.50512	7.51165	7.51808	7.52442	7.53067	7.53683	7.54291	48
12	7.54291	7.54890	7.55481	7.56064	7.56639	7.57206	7.57767	47
13	7.57767	7.58320	7.58866	7.59406	7.59939	7.60465	7.60985	46
14	7.60985	7.61499	7.62007	7.62509	7.63006	7.63496	7.63982	45
15	7.63982	7.64461	7.64936	7.65406	7.65870	7.66330	7.66784	44
16	7.66784	7.67235	7.67680	7.68121	7.68557	7.68989	7.69417	43
17	7.69417	7.69841	7.70261	7.70676	7.71088	7.71496	7.71900	42
18	7.71900	7.72300	7.72697	7.73090	7.73479	7.73865	7.74248	41
19	7.74248	7.74627	7.75003	7.75376	7.75745	7.76112	7.76475	40
20	7.76475	7.76836	7.77193	7.77548	7.77899	7.78248	7.78594	39
21	7.78594	7.78938	7.79278	7.79616	7.79952	7.80284	7.80615	38
22	7.80615	7.80942	7.81268	7.81591	7.81911	7.82229	7.82545	37
23	7.82545	7.82859	7.83170	7.83479	7.83786	7.84091	7.84393	36
24	7.84393	7.84694	7.84992	7.85289	7.85583	7.85876	7.86166	35
25	7.86166	7.86455	7.86741	7.87026	7.87309	7.87590	7.87870	34
26	7.87870	7.88147	7.88423	7.88697	7.88969	7.89240	7.89509	33
27	7.89509	7.89776	7.90041	7.90305	7.90568	7.90829	7.91088	32
28	7.91088	7.91346	7.91602	7.91857	7.92110	7.92362	7.92612	31
29	7.92612	7.92861	7.93108	7.93354	7.93599	7.93842	7.94084	30
30	7.94084	7.94325	7.94564	7.94802	7.95039	7.95274	7.95508	29
31	7.95508	7.95741	7.95973	7.96203	7.96432	7.96660	7.96887	28
32	7.96887	7.97113	7.97337	7.97560	7.97782	7.98003	7.98223	27
33	7.98223	7.98442	7.98660	7.98876	7.99092	7.99306	7.99520	26
34	7.99520	7.99732	7.99943	8.00154	8.00363	8.00571	8.00779	25
35	8.00779	8.00985	8.01190	8.01395	8.01598	8.01801	8.02002	24
36	8.02002	8.02203	8.02402	8.02601	8.02799	8.02996	8.03192	23
37	8.03192	8.03387	8.03581	8.03775	8.03967	8.04159	8.04350	22
38	8.04350	8.04540	8.04729	8.04918	8.05105	8.05292	8.05478	21
39	8.05478	8.05663	8.05848	8.06031	8.06214	8.06396	8.06578	20
40	8.06578	8.06758	8.06938	8.07117	8.07295	8.07473	8.07650	19
41	8.07650	8.07826	8.08002	8.08176	8.08350	8.08524	8.08696	18
42	8.08696	8.08868	8.09040	8.09210	8.09380	8.09550	8.09718	17
43	8.09718	8.09886	8.10054	8.10220	8.10386	8.10552	8.10717	16
44	8.10717	8.10881	8.11044	8.11207	8.11370	8.11531	8.11693	15
45	8.11693	8.11853	8.12013	8.12172	8.12331	8.12489	8.12647	14
46	8.12647	8.12804	8.12961	8.13117	8.13272	8.13427	8.13581	13
47	8.13581	8.13735	8.13888	8.14041	8.14193	8.14344	8.14495	12
48	8.14495	8.14646	8.14796	8.14945	8.15094	8.15243	8.15391	11
49	8.15391	8.15538	8.15685	8.15832	8.15978	8.16123	8.16268	10
50	8.16268	8.16413	8.16557	8.16700	8.16843	8.16986	8.17128	9
51	8.17128	8.17270	8.17411	8.17552	8.17692	8.17832	8.17971	8
52	8.17971	8.18110	8.18249	8.18387	8.18524	8.18662	8.18798	7
53	8.18798	8.18935	8.19071	8.19206	8.19341	8.19476	8.19610	6
54	8.19610	8.19744	8.19877	8.20010	8.20143	8.20275	8.20407	5
55	8.20407	8.20538	8.20669	8.20800	8.20930	8.21060	8.21189	4
56	8.21189	8.21319	8.21447	8.21576	8.21703	8.21831	8.21958	3
57	8.21958	8.22085	8.22211	8.22337	8.22463	8.22588	8.22713	2
58	8.22713	8.22838	8.22962	8.23086	8.23210	8.23333	8.23456	1
59	8.23456	8.23578	8.23700	8.23822	8.23944	8.24065	8.24186	0
	60″	50″	40″	30″	20″	10″	0″	′

L. Cos. 89°

L. Tang. 0°

′	0″	10″	20″	30″	40″	50″	60″	
0	....	5.68557	5.98660	6.16270	6.28763	6.38454	6.46373	59
1	6.46373	6.53067	6.58866	6.63982	6.68557	6.72697	6.76476	58
2	6.76476	6.79952	6.83170	6.86167	6.88969	6.91602	6.94085	57
3	6.94085	6.96433	6.98660	7.00779	7.02800	7.04730	7.06579	56
4	7.06579	7.08352	7.10055	7.11694	7.13273	7.14797	7.16270	55
5	7.16270	7.17694	7.19073	7.20409	7.21705	7.22964	7.24188	54
6	7.24188	7.25378	7.26536	7.27664	7.28764	7.29836	7.30882	53
7	7.30882	7.31904	7.32903	7.33879	7.34833	7.35767	7.36682	52
8	7.36682	7.37577	7.38455	7.39315	7.40158	7.40985	7.41797	51
9	7.41797	7.42594	7.43376	7.44145	7.44900	7.45643	7.46373	50
10	7.46373	7.47091	7.47797	7.48492	7.49176	7.49849	7.50512	49
11	7.50512	7.51165	7.51809	7.52443	7.53067	7.53683	7.54291	48
12	7.54291	7.54890	7.55481	7.56064	7.56639	7.57207	7.57767	47
13	7.57767	7.58320	7.58867	7.59406	7.59939	7.60466	7.60986	46
14	7.60986	7.61500	7.62008	7.62510	7.63006	7.63497	7.63982	45
15	7.63982	7.64462	7.64937	7.65406	7.65871	7.66330	7.66785	44
16	7.66785	7.67235	7.67680	7.68121	7.68558	7.68990	7.69418	43
17	7.69418	7.69842	7.70261	7.70677	7.71088	7.71496	7.71900	42
18	7.71900	7.72301	7.72697	7.73090	7.73480	7.73866	7.74248	41
19	7.74248	7.74628	7.75004	7.75377	7.75746	7.76113	7.76476	40
20	7.76476	7.76837	7.77194	7.77549	7.77900	7.78249	7.78595	39
21	7.78595	7.78938	7.79279	7.79617	7.79952	7.80285	7.80615	38
22	7.80615	7.80943	7.81269	7.81591	7.81912	7.82230	7.82546	37
23	7.82546	7.82860	7.83171	7.83480	7.83787	7.84092	7.84394	36
24	7.84394	7.84695	7.84993	7.85290	7.85584	7.85877	7.86167	35
25	7.86167	7.86456	7.86743	7.87027	7.87310	7.87591	7.87871	34
26	7.87871	7.88148	7.88424	7.88698	7.88970	7.89241	7.89510	33
27	7.89510	7.89777	7.90043	7.90307	7.90569	7.90830	7.91089	32
28	7.91089	7.91347	7.91603	7.91858	7.92111	7.92363	7.92613	31
29	7.92613	7.92862	7.93110	7.93356	7.93601	7.93844	7.94086	30
30	7.94086	7.94326	7.94566	7.94804	7.95040	7.95276	7.95510	29
31	7.95510	7.95743	7.95974	7.96205	7.96434	7.96662	7.96889	28
32	7.96889	7.97114	7.97339	7.97562	7.97784	7.98005	7.98225	27
33	7.98225	7.98444	7.98662	7.98878	7.99094	7.99308	7.99522	26
34	7.99522	7.99734	7.99946	8.00156	8.00365	8.00574	8.00781	25
35	8.00781	8.00987	8.01193	8.01397	8.01600	8.01803	8.02004	24
36	8.02004	8.02205	8.02405	8.02604	8.02801	8.02998	8.03194	23
37	8.03194	8.03390	8.03584	8.03777	8.03970	8.04162	8.04353	22
38	8.04353	8.04543	8.04732	8.04921	8.05108	8.05295	8.05481	21
39	8.05481	8.05666	8.05851	8.06034	8.06217	8.06399	8.06581	20
40	8.06581	8.06761	8.06941	8.07120	8.07298	8.07476	8.07653	19
41	8.07653	8.07829	8.08005	8.08180	8.08354	8.08527	8.08700	18
42	8.08700	8.08872	8.09043	8.09214	8.09384	8.09553	8.09722	17
43	8.09722	8.09890	8.10057	8.10224	8.10390	8.10555	8.10720	16
44	8.10720	8.10884	8.11048	8.11211	8.11373	8.11535	8.11696	15
45	8.11696	8.11857	8.12017	8.12176	8.12335	8.12493	8.12651	14
46	8.12651	8.12808	8.12965	8.13121	8.13276	8.13431	8.13585	13
47	8.13585	8.13739	8.13892	8.14045	8.14197	8.14348	8.14500	12
48	8.14500	8.14650	8.14800	8.14950	8.15099	8.15247	8.15395	11
49	8.15395	8.15543	8.15690	8.15836	8.15982	8.16128	8.16273	10
50	8.16273	8.16417	8.16561	8.16705	8.16848	8.16991	8.17133	9
51	8.17133	8.17275	8.17416	8.17557	8.17697	8.17837	8.17976	8
52	8.17976	8.18115	8.18254	8.18392	8.18530	8.18667	8.18804	7
53	8.18804	8.18940	8.19076	8.19211	8.19347	8.19481	8.19616	6
54	8.19616	8.19749	8.19883	8.20016	8.20149	8.20281	8.20413	5
55	8.20413	8.20544	8.20675	8.20806	8.20936	8.21066	8.21195	4
56	8.21195	8.21324	8.21453	8.21581	8.21709	8.21837	8.21964	3
57	8.21964	8.22091	8.22217	8.22343	8.22469	8.22595	8.22720	2
58	8.22720	8.22844	8.22968	8.23092	8.23216	8.23339	8.23462	1
59	8.23462	8.23585	8.23707	8.23829	8.23950	8.24071	8.24192	0
	60″	50″	40″	30″	20″	10″	0″	′

L. Cotang. 89°

L. Sine 1°

′	0″	10″	20″	30″	40″	50″	60″		d.
0	8.24 186	306	426	546	665	785	903	59	120
1	903	*022	*140	*258	*375	*493	*609	58	118
2	8.25 609	726	842	958	*074	*189	*304	57	116
3	8.26 304	419	533	648	761	875	988	56	114
4	988	*101	*214	*326	*438	*550	*661	55	112
5	8.27 661	773	883	994	*104	*215	*324	54	110
6	8.28 324	434	543	652	761	869	977	53	109
7	977	*085	*193	*300	*407	*514	*621	52	107
8	8.29 621	727	833	939	*044	*150	*255	51	106
9	8.30 255	359	464	568	672	776	879	50	104
10	879	983	*086	*188	*291	*393	*495	49	103
11	8.31 495	597	699	800	901	*002	*103	48	101
12	8.32 103	203	303	403	503	602	702	47	100
13	702	801	899	998	*096	*195	*292	46	98
14	8.33 292	390	488	585	682	779	875	45	97
15	875	972	*068	*164	*260	*355	*450	44	96
16	8.34 450	546	640	735	830	924	*018	43	95
17	8.35 018	112	206	299	392	485	578	42	93
18	578	671	764	856	948	*040	*131	41	92
19	8.36 131	223	314	405	496	587	678	40	91
20	678	768	858	948	*038	*128	*217	39	90
21	8.37 217	306	395	484	573	662	750	38	89
22	750	838	926	*014	*101	*189	*276	37	88
23	8.38 276	363	450	537	624	710	796	36	87
24	796	882	968	*054	*139	*225	*310	35	86
25	8.39 310	395	480	565	649	734	818	34	85
26	818	902	986	*070	*153	*237	*320	33	84
27	8.40 320	403	486	569	651	734	816	32	83
28	816	898	980	*062	*144	*225	*307	31	82
29	8.41 307	388	469	550	631	711	792	30	81
30	792	872	952	*032	*112	*192	*272	29	80
31	8.42 272	351	430	510	589	667	746	28	79
32	746	825	903	982	*060	*138	*216	27	78
33	8.43 216	293	371	448	526	603	680	26	77
34	680	757	834	910	987	*063	*139	25	76
35	8.44 139	216	292	367	443	519	594	24	76
36	594	669	745	820	895	969	*044	23	75
37	8.45 044	119	193	267	341	415	489	22	74
38	489	563	637	710	784	857	930	21	74
39	930	*003	*076	*149	*222	*294	*366	20	73
40	8.46 366	439	511	583	655	727	799	19	72
41	799	870	942	*013	*084	*155	*226	18	71
42	8.47 226	297	368	439	509	580	650	17	71
43	650	720	790	860	930	*000	*069	16	70
44	8.48 069	139	208	278	347	416	485	15	69
45	485	554	622	691	760	828	896	14	68
46	896	965	*033	*101	*169	*236	*304	13	68
47	8.49 304	372	439	506	574	641	708	12	67
48	708	775	842	908	975	*042	*108	11	67
49	8.50 108	174	241	307	373	439	504	10	66
50	504	570	636	701	767	832	897	9	66
51	897	963	*028	*092	*157	*222	*287	8	65
52	8.51 287	351	416	480	544	609	673	7	64
53	673	737	801	864	928	992	*055	6	64
54	8.52 055	119	182	245	308	371	434	5	63
55	434	497	560	623	685	748	810	4	63
56	810	872	935	997	*059	*121	*183	3	62
57	8.53 183	245	306	368	429	491	552	2	62
58	552	614	675	736	797	858	919	1	61
59	919	979	*040	*101	*161	*222	*282	0	60
	60″	50″	40″	30″	20″	10″	0″	′	d.

PP.

	120	119	118	117	116
1	12.0	11.9	11.8	11 7	11.6
2	24.0	23.8	23.6	23.4	23.2
3	36.0	35.7	35.4	35.1	34.8
4	48.0	47.6	47.2	46.8	46.4
5	60.0	59.5	59.0	58.5	58.0
6	72.0	71.4	70.8	70.2	69.6
7	84.0	83.3	82.6	81.9	81.2
8	96.0	95.2	94.4	93.6	92.8
9	108.0	107.1	106.2	105.3	104.4

	115	114	113	112	111
1	11.5	11.4	11.3	11.2	11.1
2	23.0	22.8	22.6	22.4	22.2
3	34.5	34.2	33.9	33.6	33.3
4	46.0	45.6	45.2	44.8	44.4
5	57.5	57.0	56.5	56.0	55.5
6	69.0	68.4	67.8	67.2	66.6
7	80.5	79.8	79.1	78.4	77.7
8	92.0	91.2	90.4	89.6	88.8
9	103.5	102.6	101.7	100.8	99.9

	110	109	108	107	106
1	11.0	10.9	10.8	10.7	10.6
2	22.0	21.8	21.6	21.4	21.2
3	33.0	32.7	32.4	32.1	31.8
4	44.0	43.6	43.2	42.8	42.4
5	55.0	54.5	54.0	53.5	53.0
6	66.0	65.4	64.8	64.2	63.6
7	77.0	76.3	75.6	74.9	74.2
8	88.0	87.2	86.4	85 6	84.8
9	99.0	98.1	97.2	96.3	95.4

	105	104	103	102	101
1	10.5	10.4	10.3	10.2	10.1
2	21.0	20.8	20.6	20.4	20.2
3	31.5	31.2	30.9	30.6	30.3
4	42.0	41.6	41.2	40.8	40.4
5	52.5	52.0	51.5	51.0	50.5
6	63.0	62.4	61.8	61.2	60.6
7	73.5	72.8	72.1	71.4	70.7
8	84.0	83.2	82.4	81.6	80.8
9	94.5	93.6	92.7	91.8	90.9

	100	99	98	97	96
1	10.0	9.9	9.8	9.7	9.6
2	20.0	19.8	19.6	19.4	19.2
3	30.0	29.7	29.4	29.1	28.8
4	40.0	39.6	39.2	38.8	38.4
5	50.0	49.5	49.0	48.5	48.0
6	60.0	59.4	58.8	58.2	57.6
7	70.0	69.3	68.6	67.9	67.2
8	80.0	79.2	78.4	77.6	76.8
9	90.0	89.1	88.2	87.3	86.4

	95	94	93	92	91
1	9.5	9.4	9.3	9.2	9.1
2	19.0	18.8	18.6	18.4	18.2
3	28.5	28.2	27.9	27 6	27.3
4	38.0	37.6	37.2	36.8	36.4
5	47.5	47.0	46.5	46.0	45.5
6	57.0	56.4	55.8	55.2	54.6
7	66.5	65.8	65.1	64.4	63.7
8	76.0	75.2	74.4	73.6	72.8
9	85.5	84.6	83.7	82.8	81.9

PP.

L. Cos. 88°

L. Tang. 1°

′	0″	10″	20″	30″	40″	50″	60″		d.
0	8.24 192	313	433	553	672	791	910	59	120
1	910	*029	*147	*265	*382	*500	*616	58	118
2	8.25 616	733	849	965	*081	*196	*312	57	116
3	8.26 312	426	541	655	769	882	996	56	114
4	996	*109	*221	*334	*446	*558	*669	55	112
5	8.27 669	780	891	*002	*112	*223	*332	54	110
6	8.28 332	442	551	660	769	877	986	53	109
7	986	*094	*201	*309	*416	*523	*629	52	107
8	8.29 629	736	842	947	*053	*158	*263	51	106
9	8.30 263	368	473	577	681	785	888	50	104
10	888	992	*095	*198	*300	*403	*505	49	103
11	8.31 505	606	708	809	911	*012	*112	48	101
12	8.32 112	213	313	413	513	612	711	47	100
13	711	810	909	*008	*106	*205	*302	46	98
14	8.33 302	400	498	595	692	789	886	45	97
15	886	982	*078	*174	*270	*366	*461	44	96
16	8.34 461	556	651	746	840	935	*029	43	95
17	8.35 029	123	217	310	403	497	590	42	94
18	590	682	775	867	959	*051	*143	41	92
19	8.36 143	235	326	417	508	599	689	40	91
20	689	780	870	960	*050	*140	*229	39	90
21	8.37 229	318	408	497	585	674	762	38	89
22	762	850	938	*026	*114	*202	*289	37	88
23	8.38 289	376	463	550	636	723	809	36	87
24	809	895	981	*067	*153	*238	*323	35	86
25	8.39 323	408	493	578	663	747	832	34	85
26	832	916	*000	*083	*167	*250	*334	33	84
27	8.40 334	417	500	583	665	748	830	32	83
28	830	913	995	*077	*158	*240	*321	31	82
29	8.41 321	403	484	565	646	726	807	30	81
30	807	887	967	*048	*127	*207	*287	29	80
31	8.42 287	366	446	525	604	683	762	28	79
32	762	840	919	997	*075	*154	*232	27	78
33	8.43 232	309	387	464	542	619	696	26	77
34	696	773	850	927	*003	*080	*156	25	77
35	8.44 156	232	308	384	460	536	611	24	76
36	611	686	762	837	912	987	*061	23	75
37	8.45 061	136	210	285	359	433	507	22	74
38	507	581	655	728	802	875	948	21	74
39	948	*021	*094	*167	*240	*312	*385	20	73
40	8.46 385	457	529	602	674	745	817	19	72
41	817	889	960	*032	*103	*174	*245	18	71
42	8.47 245	316	387	458	528	599	669	17	71
43	669	740	810	880	950	*020	*089	16	70
44	8.48 089	159	228	298	367	436	505	15	69
45	505	574	643	711	780	849	917	14	69
46	917	985	*053	*121	*189	*257	*325	13	68
47	8.49 325	393	460	528	595	662	729	12	67
48	729	796	863	930	997	*063	*130	11	67
49	8.50 130	196	263	329	395	461	527	10	66
50	527	593	658	724	789	855	920	9	66
51	920	985	*050	*115	*180	*245	*310	8	65
52	8.51 310	374	439	503	568	632	696	7	64
53	696	760	824	888	952	*015	*079	6	64
54	8.52 079	143	206	269	332	396	459	5	63
55	459	522	584	647	710	772	835	4	63
56	835	897	960	*022	*084	*146	*208	3	62
57	8.53 208	270	332	393	455	516	578	2	62
58	578	639	700	762	823	884	945	1	61
59	945	*005	*066	*127	*187	*248	*308	0	60
	60″	50″	40″	30″	20″	10″	0″	′	d.

PP.

	90	89	88	87	86
1	9.0	8.9	8.8	8.7	8.6
2	18.0	17.8	17.6	17.4	17.2
3	27.0	26.7	26.4	26.1	25.8
4	36.0	35.6	35.2	34.8	34.4
5	45.0	44.5	44.0	43.5	43.0
6	54.0	53.4	52.8	52.2	51.6
7	63.0	62.3	61.6	60.9	60.2
8	72.0	71.2	70.4	69.6	68.8
9	81.0	80.1	79.2	78.3	77.4
	85	84	83	82	81
1	8.5	8.4	8.3	8.2	8.1
2	17.0	16.8	16.6	16.4	16.2
3	25.5	25 2	24.9	24.6	24.3
4	34.0	33.6	33.2	32.8	32.4
5	42.5	42.0	41.5	41.0	40.5
6	51.0	50.4	49.8	49.2	48.6
7	59.5	58.8	58.1	57.4	56.7
8	68.0	67.2	66.4	65.6	64.8
9	76.5	75.6	74.7	73.8	72.9
	80	79	78	77	76
1	8.0	7.9	7.8	7.7	7.6
2	16.0	15.8	15.6	15.4	15.2
3	24.0	23.7	23.4	23.1	22.8
4	32.0	31.6	31.2	30.8	30.4
5	40.0	39.5	39.0	38.5	38.0
6	48.0	47.4	46.8	46.2	45.6
7	56.0	55.3	54.6	53.9	53.2
8	64.0	63.2	62.4	61.6	60.8
9	72.0	71.1	70.2	69.3	68.4
	75	74	73	72	71
1	7.5	7.4	7.3	7.2	7.1
2	15.0	14.8	14.6	14.4	14.2
3	22.5	22.2	21.9	21.6	21.3
4	30.0	29.6	29.2	28.8	28.4
5	37.5	37.0	36.5	36.0	35.5
6	45.0	44.4	43.8	43.2	42.6
7	52.5	51.8	51.1	50.4	49.7
8	60.0	59.2	58.4	57.6	56.8
9	67.5	66.6	65.7	64.8	63.9
	70	69	68	67	66
1	7.0	6.9	6.8	6.7	6.6
2	14.0	13.8	13.6	13.4	13.2
3	21.0	20.7	20.4	20.1	19.8
4	28.0	27.6	27.2	26.8	26.4
5	35.0	34.5	34.0	33.5	33.0
6	42.0	41.4	40.8	40.2	39.6
7	49.0	48.3	47.6	46.9	46.2
8	56.0	55.2	54.4	53.6	52.8
9	63.0	62.1	61.2	60.3	59.4
	65	64	63	62	61
1	6.5	6.4	6.3	6.2	6.1
2	13.0	12.8	12.6	12.4	12.2
3	19.5	19.2	18.9	18.6	18.3
4	26.0	25.6	25.2	24.8	24.4
5	32.5	32.0	31.5	31.0	30.5
6	39.0	38.4	37.8	37.2	36.6
7	45.5	44.8	44.1	43.4	42.7
8	52.0	51.2	50.4	49.6	48.8
9	58.5	57.6	56.7	55.8	54.9

PP

L. Cotg. 88°

L. Sine 2°

′	0″	10″	20″	30″	40″	50″	60″		d.
0	8.54 282	342	402	462	522	582	642	59	60
1	642	702	762	821	881	940	999	58	60
2	999	*059	*118	*177	*236	*295	*354	57	59
3	8.55 354	413	471	530	589	647	705	56	58
4	705	764	822	880	938	996	*054	55	58
5	8.56 054	112	170	227	285	342	400	54	58
6	400	457	515	572	629	686	743	53	57
7	743	800	857	914	970	*027	*084	52	57
8	8.57 084	140	196	253	309	365	421	51	56
9	421	477	533	589	645	701	757	50	56
10	757	812	868	923	979	*034	*089	49	54
11	8.58 089	144	200	255	310	364	419	48	55
12	419	474	529	583	638	693	747	47	55
13	747	801	856	910	964	*018	*072	46	54
14	8.59 072	126	180	234	288	341	395	45	54
15	395	448	502	555	609	662	715	44	54
16	715	768	821	874	927	980	*033	43	53
17	8.60 033	086	139	191	244	296	349	42	53
18	349	401	454	506	558	610	662	41	52
19	662	714	766	818	870	922	973	40	52
20	973	*025	*077	*128	*180	*231	*282	39	52
21	8.61 282	334	385	436	487	538	589	38	51
22	589	640	691	742	792	843	894	37	51
23	894	944	995	*045	*096	*146	*196	36	50
24	8.62 196	246	297	347	397	447	497	35	50
25	497	546	596	646	696	745	795	34	50
26	795	844	894	943	993	*042	*091	33	50
27	8.63 091	140	189	238	288	336	385	32	49
28	385	434	483	532	580	629	678	31	49
29	678	726	775	823	871	920	968	30	48
30	968	*016	*064	*112	*160	*208	*256	29	48
31	8.64 256	304	352	400	448	495	543	28	48
32	543	590	638	685	733	780	827	27	48
33	827	875	922	969	*016	*063	*110	26	47
34	8.65 110	157	204	251	298	344	391	25	47
35	391	438	484	531	577	624	670	24	47
36	670	717	763	809	855	901	947	23	46
37	947	994	*040	*085	*131	*177	*223	22	46
38	8.66 223	269	314	360	406	451	497	21	46
39	497	542	588	633	678	724	769	20	46
40	769	814	859	904	949	994	*039	19	45
41	8.67 039	084	129	174	219	263	308	18	45
42	308	353	397	442	486	531	575	17	45
43	575	619	664	708	752	796	841	16	44
44	841	885	929	973	*017	*060	*104	15	44
45	8.68 104	148	192	236	279	323	367	14	44
46	367	410	454	497	540	584	627	13	44
47	627	670	714	757	800	843	886	12	43
48	886	929	972	*015	*058	*101	*144	11	43
49	8.69 144	187	229	272	315	357	400	10	43
50	400	442	485	527	570	612	654	9	42
51	654	697	739	781	823	865	907	8	42
52	907	949	991	*033	*075	*117	*159	7	42
53	8.70 159	201	242	284	326	367	409	6	42
54	409	451	492	534	575	616	658	5	42
55	658	699	740	781	823	864	905	4	41
56	905	946	987	*028	*069	*110	*151	3	41
57	8.71 151	192	232	273	314	355	395	2	41
58	395	436	476	517	557	598	638	1	41
59	638	679	719	759	800	840	880	0	40
	60″	50″	40″	30″	20″	10″	0″	′	d.

PP.

	61	60	59	58
1	6.1	6.0	5.9	5.8
2	12.2	12.0	11.8	11.6
3	18.3	18.0	17.7	17.4
4	24.4	24.0	23.6	23.2
5	30.5	30.0	29.5	29.0
6	36.6	36.0	35.4	34.8
7	42.7	42.0	41.3	40.6
8	48.8	48.0	47.2	46.4
9	54.9	54.0	53.1	52.2

	57	56	55	54
1	5.7	5.6	5.5	5.4
2	11.4	11.2	11.0	10.8
3	17.1	16.8	16.5	16.2
4	22.8	22.4	22.0	21.6
5	28.5	28.0	27.5	27.0
6	34.2	33.6	33.0	32.4
7	39.9	39.2	38.5	37.8
8	45.6	44.8	44.0	43.2
9	51.3	50.4	49.5	48.6

	53	52	51	50
1	5.3	5.2	5.1	5.0
2	10.6	10.4	10.2	10.0
3	15.9	15.6	15.3	15.0
4	21.2	20.8	20.4	20.0
5	26.5	26.0	25.5	25.0
6	31.8	31.2	30.6	30.0
7	37.1	36.4	35.7	35.0
8	42.4	41.6	40.8	40.0
9	47.7	46.8	45.9	45.0

	49	48	47	46
1	4.9	4.8	4.7	4.6
2	9.8	9.6	9.4	9.2
3	14.7	14.4	14.1	13.8
4	19.6	19.2	18.8	18.4
5	24.5	24.0	23.5	23.0
6	29.4	28.8	28.2	27.6
7	34.3	33.6	32.9	32.2
8	39.2	38.4	37.6	36.8
9	44.1	43.2	42.3	41.4

	45	44	43	42
1	4.5	4.4	4.3	4.2
2	9.0	8.8	8.6	8.4
3	13.5	13.2	12.9	12.6
4	18.0	17.6	17.2	16.8
5	22.5	22.0	21.5	21.0
6	27.0	26.4	25.8	25.2
7	31.5	30.8	30.1	29.4
8	36.0	35.2	34.4	33.6
9	40.5	39.6	38.7	37.8

	41	40
1	4.1	4.0
2	8.2	8.0
3	12.3	12.0
4	16.4	16.0
5	20.5	20.0
6	24.6	24.0
7	28.7	28.0
8	32.8	32.0
9	36.9	36.0

PP.

L. Cos. 87°

′	0″	10″	20″	30″	40″	50″	60″		d.
0	8.54 308	369	429	489	549	609	669	59	60
1	669	729	789	848	908	967	*027	58	60
2	8.55 027	086	145	205	264	323	382	57	59
3	382	441	499	558	617	675	734	56	59
4	734	792	850	909	967	*025	*083	55	58
5	8.56 083	141	199	256	314	372	429	54	58
6	429	487	544	601	659	716	773	53	57
7	773	830	887	944	*000	*057	*114	52	57
8	8.57 114	170	227	283	340	396	452	51	56
9	452	508	564	620	676	732	788	50	56
10	788	843	899	955	*010	*065	*121	49	56
11	8.58 121	176	231	286	341	396	451	48	55
12	451	506	561	616	670	725	779	47	55
13	779	834	888	943	997	*051	*105	46	54
14	8.59 105	159	213	267	321	375	428	45	54
15	428	482	536	589	642	696	749	44	54
16	749	802	856	909	962	*015	*068	43	53
17	8.60 068	121	173	226	279	331	384	42	53
18	384	436	489	541	593	646	698	41	52
19	698	750	802	854	906	958	*009	40	52
20	8.61 009	061	113	164	216	267	319	39	52
21	319	370	422	473	524	575	626	38	51
22	626	677	728	779	830	881	931	37	51
23	931	982	*033	*083	*134	*184	*234	36	50
24	8.62 234	285	335	385	435	485	535	35	50
25	535	585	635	685	735	784	834	34	50
26	834	884	933	983	*032	*081	*131	33	50
27	8.63 131	180	229	278	328	377	426	32	49
28	426	475	523	572	621	670	718	31	49
29	718	767	816	864	913	961	*009	30	48
30	8.64 009	058	106	154	202	250	298	29	48
31	298	346	394	442	490	538	585	28	48
32	585	633	681	728	776	823	870	27	48
33	870	918	965	*012	*060	*107	*154	26	47
34	8.65 154	201	248	295	342	388	435	25	47
35	435	482	529	575	622	668	715	24	47
36	715	761	808	854	900	947	993	23	46
37	993	*039	*085	*131	*177	*223	*269	22	46
38	8.66 269	315	361	406	452	498	543	21	46
39	543	589	634	680	725	771	816	20	46
40	816	861	906	952	997	*042	*087	19	45
41	8.67 087	132	177	222	267	312	356	18	45
42	356	401	446	490	535	579	624	17	45
43	624	668	713	757	801	846	890	16	44
44	890	934	978	*022	*066	*110	*154	15	44
45	8.68 154	198	242	286	330	373	417	14	44
46	417	461	504	548	592	635	678	13	44
47	678	722	765	808	852	895	938	12	43
48	938	981	*024	*067	*110	*153	*196	11	43
49	8.69 196	239	282	325	368	410	453	10	43
50	453	496	538	581	623	666	708	9	42
51	708	750	793	835	877	920	962	8	42
52	962	*004	*046	*088	*130	*172	*214	7	42
53	8.70 214	256	298	339	381	423	465	6	42
54	465	506	548	589	631	673	714	5	42
55	714	755	797	838	879	921	962	4	41
56	962	*003	*044	*085	*126	*167	*208	3	41
57	8.71 208	249	290	331	372	413	453	2	41
58	453	494	535	575	616	657	697	1	41
59	697	738	778	819	859	899	940	0	40
	60″	50″	40″	30″	20″	10″	0″	′	d.

PP.				
	61	60	59	58
1	6.1	6.0	5.9	5.8
2	12.2	12.0	11.8	11.6
3	18.3	18.0	17.7	17.4
4	24.4	24.0	23.6	23.2
5	30.5	30.0	29.5	29.0
6	36.6	36.0	35.4	34.8
7	42.7	42.0	41.3	40.6
8	48.8	48.0	47.2	46.4
9	54.9	54.0	53.1	52.2
	57	56	55	54
1	5.7	5.6	5.5	5.4
2	11.4	11.2	11.0	10.8
3	17.1	16.8	16.5	16.2
4	22.8	22.4	22.0	21.6
5	28.5	28.0	27.5	27.0
6	34.2	33.6	33.0	32.4
7	39.9	39.2	38.5	37.8
8	45.6	44.8	44.0	43.2
9	51.3	50.4	49.5	48.6
	53	52	51	50
1	5.3	5.2	5.1	5.0
2	10.6	10.4	10.2	10.0
3	15.9	15.6	15.3	15.0
4	21.2	20.8	20.4	20.0
5	26.5	26.0	25.5	25.0
6	31.8	31.2	30.6	30.0
7	37.1	36.4	35.7	35.0
8	42.4	41.6	40.8	40.0
9	47.7	46.8	45.9	45.0
	49	48	47	46
1	4.9	4.8	4.7	4.6
2	9.8	9.6	9.4	9.2
3	14.7	14.4	14.1	13.8
4	19.6	19.2	18.8	18.4
5	24.5	24.0	23.5	23.0
6	29.4	28.8	28.2	27.6
7	34.3	33.6	32.9	32.2
8	39.2	38.4	37.6	36.8
9	44.1	43.2	42.3	41.4
	45	44	43	42
1	4.5	4.4	4.3	4.2
2	9.0	8.8	8.6	8.4
3	13.5	13.2	12.9	12.6
4	18.0	17.6	17.2	16.8
5	22.5	22.0	21.5	21.0
6	27.0	26.4	25.8	25.2
7	31.5	30.8	30.1	29.4
8	36.0	35.2	34.4	33.6
9	40.5	39.6	38.7	37.8
	41	40		
1	4.1	4.0		
2	8.2	8.0		
3	12.3	12.0		
4	16.4	16.0		
5	20.5	20.0		
6	24.6	24.0		
7	28.7	28.0		
8	32.8	32.0		
9	36.9	36.0		
PP.				

LOGARITHMIC FUNCTIONS OF ANGLES BETWEEN 0° AND 1° AND 89° AND 90°

In the preceding table, in which the logarithms of the sine and tangent of angles between 0° and 3° and those of the cosine and cotangent between 87° and 90° are tabulated by intervals of 10 seconds proportional parts for single seconds are given only for angles between 1° and 3° and 87° and 89°. For calculations closer than to 1 seconds with angles between 0° and 1° and 89° and 90°, the first three columns on pages 30 and 31 are provided. The first of these columns headed Sec. gives the reductions from minutes to seconds of the values in the fourth column headed Min. The next two columns headed S and T contain the values in the formulas,

$\log \sin X = \log X_s + S$ (1) $\log X_s = \log \sin X - S$ (1*a*)

$\log \tan X = \log X_s + T$ (2) $\log X_s = \log \tan X - T$ (2*a*)

In these formulas, X is the angle under consideration and X_s is the same angle reduced to seconds.

The following examples will serve to illustrate the application of these formulas:

EXAMPLE I.—Find log sin 37′ 43.6″.

SOLUTION.—To apply formula 1, substitute for X_s the number of seconds contained in 37′ 43.6″ and for S the nearest value in the table corresponding to X. The reduction to seconds may be effected by multiplying 37″ by 60 and adding to the product 43.6″. However, the product of $37'' \times 60$ may be taken directly from the reduction table, in which, opposite the number 37, it is given as 2220. Therefore, $X_s = 2220 + 43.6 = 2263.6$. Then, from the Table of Logarithms of Common Numbers, log 2263.6 is taken out as 3.35480. The nearest angle for which the value of S is given in the table is 38′, opposite which number the value of S is found as 4.68557. Therefore, $\log X = 3.35480 + 4.68557 = 8.04037$.

EXAMPLE II.—Find the angle X when it is known that the log $\tan X = 7.90551$.

SOLUTION.—In this case, formula 2*a* must be employed to determine the number of seconds contained in the required angle. This formula contains T, the value of which depends on the angle X, which is as yet unknown. However, as the value of T changes inappreciably with small variations of X, it will be sufficient for this purpose to determine X approximately. This can be done by means of the table of logarithmic tangents. Referring to this table, it will be seen that the value of X (since $\log \tan X = 7.90551$) is between 27′ and 28′, for both of which values $T = 4.68558$. Substituting known values in formula 2*a*, it will be found that $\log X_s = 7.90551 - 4.68558 = 3.21993 = \log 1659.3$. Hence, $X = 1659.3'' = 27'\ 39.3''$.

Since $\cos X = \sin (90° - X)$ and $\cot X = \tan (90° - X)$, calculations involving the logarithmic cosine and cotangent of angles between 89° and 90° may be effected by computing the logarithmic sine and tangent of the compliments of these angles by the method just explained.

TABLE

OF

LOGARITHMS

OF THE

Sine, Cosine, Tangent and Cotangent

FOR

Each Minute of the Quadrant

WITH

Tables of Proportional Parts for Seconds

Note.—For angles between 45° and 90° read from right-hand page to left-hand page and from bottom of page upward, the latter being indicated by an arrow on the top of the last column of each page.

0°

Sec.	S	T	Min.	Sine	d	Tang.	d	Cotang.	Cosine	↑
0	4.68557	4.68557	0	−∞		−∞		+∞	0.00000	60
60	4.68557	4.68557	1	6.46373	30103	6.46373	30103	3.53627	0.00000	59
120	4.68557	4.68557	2	6.76476	17609	6.76476	17609	3.23524	0.00000	58
180	4.68557	4.68557	3	6.94085	12494	6.94085	12494	3.05915	0.00000	57
240	4.68557	4.68558	4	7.06579	9691	7.06579	9691	2.93421	0.00000	56
300	4.68557	4.68558	**5**	**7.16270**	7918	**7.16270**	7918	**2.83730**	**0.00000**	**55**
360	4.68557	4.68558	6	7.24188	6694	7.24188	6694	2.75812	0.00000	54
420	4.68557	4.68558	7	7.30882	5800	7.30882	5800	2.69118	0.00000	53
480	4.68557	4.68558	8	7.36682	5115	7.36682	5115	2.63318	0.00000	52
540	4.68557	4.68558	9	7.41797	4576	7.41797	4576	2.58203	0.00000	51
600	4.68557	4.68558	**10**	**7.46373**	4139	**7.46373**	4139	**2.53627**	**0.00000**	**50**
660	4.68557	4.68558	11	7.50512	3779	7.50512	3779	2.49488	0.00000	49
720	4.68557	4.68558	12	7.54291	3476	7.54291	3476	2.45709	0.00000	48
780	4.68557	4.68558	13	7.57767	3218	7.57767	3219	2.42233	0.00000	47
840	4.68557	4.68558	14	7.60985	2997	7.60986	2996	2.39014	0.00000	46
900	4.68557	4.68558	**15**	**7.63982**	2802	**7.63982**	2803	**2.36018**	**0.00000**	**45**
960	4.68557	4.68558	16	7.66784	2633	7.66785	2633	2.33215	0.00000	44
1020	4.68557	4.68558	17	7.69417	2483	7.69418	2482	2.30582	9.99999	43
1080	4.68557	4.68558	18	7.71900	2348	7.71900	2348	2.28100	9.99999	42
1140	4.68557	4.68558	19	7.74248	2227	7.74248	2228	2.25752	9.99999	41
1200	4.68557	4.68558	**20**	**7.76475**	2119	**7.76476**	2119	**2.23524**	**9.99999**	**40**
1260	4.68557	4.68558	21	7.78594	2021	7.78595	2020	2.21405	9.99999	39
1320	4.68557	4.68558	22	7.80615	1930	7.80615	1931	2.19385	9.99999	38
1380	4.68557	4.68558	23	7.82545	1848	7.82546	1848	2.17454	9.99999	37
1440	4.68557	4.68558	24	7.84393	1773	7.84394	1773	2.15606	9.99999	36
1500	4.68557	4.68558	**25**	**7.86166**	1704	**7.86167**	1704	**2.13833**	**9.99999**	**35**
1560	4.68557	4.68558	26	7.87870	1639	7.87871	1639	2.12129	9.99999	34
1620	4.68557	4.68558	27	7.89509	1579	7.89510	1579	2.10490	9.99999	33
1680	4.68557	4.68558	28	7.91088	1524	7.91089	1524	2.08911	9.99999	32
1740	4.68557	4.68559	29	7.92612	1472	7.92613	1473	2.07387	9.99998	31
1800	4.68557	4.68559	**30**	**7.94084**		**7.94086**		**2.05914**	**9.99998**	**30**
Sec.	S	T		Cosine	d	Cotang.	d	Tang.	Sine	Min.

89°

0°

Sec.	S	T	Min.	Sine	d	Tang.	d	Cotang.	Cosine	↑
800	4.68557	4.68559	30	7.94084		7.94086		2.05914	9.99998	30
					1424		1424			
860	4.68557	4.68559	31	7.95508		7.95510		2.04490	9.99998	29
					1379		1379			
920	4.68557	4.68559	32	7.96887		7.96889		2.03111	9.99998	28
					1336		1336			
980	4.68557	4.68559	33	7.98223		7.98225		2.01775	9.99998	27
					1297		1297			
040	4.68557	4.68559	34	7.99520		7.99522		2.00478	9.99998	26
					1259		1259			
100	4.68557	4.68559	35	8.00779		8.00781		1.99219	9.99998	25
					1223		1223			
160	4.68557	4.68559	36	8.02002		8.02004		1.97996	9.99998	24
					1190		1190			
220	4.68557	4.68559	37	8.03192		8.03194		1.96806	9.99997	23
					1158		1159			
280	4.68557	4.68559	38	8.04350		8.04353		1.95647	9.99997	22
					1128		1128			
340	4.68557	4.68559	39	8.05478		8.05481		1.94519	9.99997	21
					1100		1100			
400	4.68557	4.68559	40	8.06578		8.06581		1.93419	9.99997	20
					1072		1072			
460	4.68556	4.68560	41	8.07650		8.07653		1.92347	9.99997	19
					1046		1047			
520	4.68556	4.68560	42	8.08696		8.08700		1.91300	9.99997	18
					1022		1022			
580	4.68556	4.68560	43	8.09718		8.09722		1.90278	9.99997	17
					999		998			
640	4.68556	4.68560	44	8.10717		8.10720		1.89280	9.99996	16
					976		976			
700	4.68556	4.68560	45	8.11693		8.11696		1.88304	9.99996	15
					954		955			
760	4.68556	4.68560	46	8.12647		8.12651		1.87349	9.99996	14
					934		934			
820	4.68556	4.68560	47	8.13581		8.13585		1.86415	9.99996	13
					914		915			
880	4.68556	4.68560	48	8.14495		8.14500		1.85500	9.99996	12
					896		895			
940	4.68556	4.68560	49	8.15391		8.15395		1.84605	9.99996	11
					877		878			
000	4.68556	4.68561	50	8.16268		8.16273		1.83727	9.99995	10
					860		860			
060	4.68556	4.68561	51	8.17128		8.17133		1.82867	9.99995	9
					843		843			
120	4.68556	4.68561	52	8.17971		8.17976		1.82024	9.99995	8
					827		828			
180	4.68556	4.68561	53	8.18798		8.18804		1.81196	9.99995	7
					812		812			
240	4.68556	4.68561	54	8.19610		8.19616		1.80384	9.99995	6
					797		797			
300	4.68556	4.68561	55	8.20407		8.20413		1.79587	9.99994	5
					782		782			
360	4.68556	4.68561	56	8.21189		8.21195		1.78805	9.99994	4
					769		769			
420	4.68555	4.68561	57	8.21958		8.21964		1.78036	9.99994	3
					755		756			
480	4.68555	4.68562	58	8.22713		8.22720		1.77280	9.99994	2
					743		742			
540	4.68555	4.68562	59	8.23456		8.23462		1.76538	9.99994	1
					730		730			
600	4.68555	4.68562	60	8.24186		8.24192		1.75808	9.99993	0
Sec.	S	T		Cosine	d	Cotang.	d	Tang.	Sine	Min.

89°

1°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**8.24186**	717	**8.24192**	718	**1.75808**	**9.99993**	0	**60**
1	8.24903	706	8.24910	706	1.75090	9.99993	0	59
2	8.25609	695	8.25616	696	1.74384	9.99993	0	58
3	8.26304	684	8.26312	684	1.73688	9.99993	1	57
4	8.26988	673	8.26996	673	1.73004	9.99992	0	56
5	**8.27661**	663	**8.27669**	663	**1.72331**	**9.99992**	0	**55**
6	8.28324	653	8.28332	654	1.71668	9.99992	0	54
7	8.28977	644	8.28986	643	1.71014	9.99992	0	53
8	8.29621	634	8.29629	634	1.70371	9.99992	1	52
9	8.30255	624	8.30263	625	1.69737	9.99991	0	51
10	**8.30879**	616	**8.30888**	617	**1.69112**	**9.99991**	0	**50**
11	8.31495	608	8.31505	607	1.68495	9.99991	1	49
12	8.32103	599	8.32112	599	1.67888	9.99990	0	48
13	8.32702	590	8.32711	591	1.67289	9.99990	0	47
14	8.33292	583	8.33302	584	1.66698	9.99990	0	46
15	**8.33875**	575	**8.33886**	575	**1.66114**	**9.99990**	1	**45**
16	8.34450	568	8.34461	568	1.65539	9.99989	0	44
17	8.35018	560	8.35029	561	1.64971	9.99989	0	43
18	8.35578	553	8.35590	553	1.64410	9.99989	0	42
19	8.36131	547	8.36143	546	1.63857	9.99989	1	41
20	**8.36678**	539	**8.36689**	540	**1.63311**	**9.99988**	0	**40**
21	8.37217	533	8.37229	533	1.62771	9.99988	0	39
22	8.37750	526	8.37762	527	1.62238	9.99988	1	38
23	8.38276	520	8.38289	520	1.61711	9.99987	0	37
24	8.38796	514	8.38809	514	1.61191	9.99987	0	36
25	**8.39310**	508	**8.39323**	509	**1.60677**	**9.99987**	1	**35**
26	8.39818	502	8.39832	502	1.60168	9.99986	0	34
27	8.40320	496	8.40334	496	1.59666	9.99986	0	33
28	8.40816	491	8.40830	491	1.59170	9.99986	1	32
29	8.41307	485	8.41321	486	1.58679	9.99985	0	31
30	**8.41792**	480	**8.41807**	480	**1.58193**	**9.99985**	0	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

88°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**8.41792**	480	**8.41807**	480	**1.58193**	**9.99985**	0	**30**
31	8.42272	474	8.42287	475	1.57713	9.99985	1	29
32	8.42746	470	8.42762	470	1.57238	9.99984	0	28
33	8.43216	464	8.43232	464	1.56768	9.99984	0	27
34	8.43680	459	8.43696	460	1.56304	9.99984	1	26
35	**8.44139**	455	**8.44156**	455	**1.55844**	**9.99983**	0	**25**
36	8.44594	450	8.44611	450	1.55389	9.99983	0	24
37	8.45044	445	8.45061	446	1.54939	9.99983	1	23
38	8.45489	441	8.45507	441	1.54493	9.99982	0	22
39	8.45930	436	8.45948	437	1.54052	9.99982	0	21
40	**8.46366**	433	**8.46385**	432	**1.53615**	**9.99982**	1	**20**
41	8.46799	427	8.46817	428	1.53183	9.99981	0	19
42	8.47226	424	8.47245	424	1.52755	9.99981	0	18
43	8.47650	419	8.47669	420	1.52331	9.99981	1	17
44	8.48069	416	8.48089	416	1.51911	9.99980	0	16
45	**8.48485**	411	**8.48505**	412	**1.51495**	**9.99980**	1	**15**
46	8.48896	408	8.48917	408	1.51083	9.99979	0	14
47	8.49304	404	8.49325	404	1.50675	9.99979	0	13
48	8.49708	400	8.49729	401	1.50271	9.99979	1	12
49	8.50108	396	8.50130	397	1.49870	9.99978	0	11
50	**8.50504**	393	**8.50527**	393	**1.49473**	**9.99978**	1	**10**
51	8.50897	390	8.50920	390	1.49080	9.99977	0	9
52	8.51287	386	8.51310	386	1.48690	9.99977	0	8
53	8.51673	382	8.51696	383	1.48304	9.99977	1	7
54	8.52055	379	8.52079	380	1.47921	9.99976	0	6
55	**8.52434**	376	**8.52459**	376	**1.47541**	**9.99976**	1	**5**
56	8.52810	373	8.52835	373	1.47165	9.99975	0	4
57	8.53183	369	8.53208	370	1.46792	9.99975	1	3
58	8.53552	367	8.53578	367	1.46422	9.99974	0	2
59	8.53919	363	8.53945	363	1.46055	9.99974	0	1
60	**8.54282**	360	**8.54308**	361	**1.45692**	**9.99974**	1	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

2°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	8.54282	360	8.54308	361	1.45692	9.99974	1	60
1	8.54642	357	8.54669	358	1.45331	9.99973	0	59
2	8.54999	355	8.55027	355	1.44973	9.99973	1	58
3	8.55354	351	8.55382	352	1.44618	9.99972	0	57
4	8.55705	349	8.55734	349	1.44266	9.99972	1	56
5	8.56054	346	8.56083	346	1.43917	9.99971	0	55
6	8.56400	343	8.56429	344	1.43571	9.99971	1	54
7	8.56743	341	8.56773	341	1.43227	9.99970	0	53
8	8.57084	337	8.57114	338	1.42886	9.99970	1	52
9	8.57421	336	8.57452	336	1.42548	9.99969	0	51
10	8.57757	332	8.57788	333	1.42212	9.99969	1	50
11	8.58089	330	8.58121	330	1.41879	9.99968	0	49
12	8.58419	328	8.58451	328	1.41549	9.99968	1	48
13	8.58747	325	8.58779	326	1.41221	9.99967	0	47
14	8.59072	323	8.59105	323	1.40895	9.99967	0	46
15	8.59395	320	8.59428	321	1.40572	9.99967	1	45
16	8.59715	318	8.59749	319	1.40251	9.99966	0	44
17	8.60033	316	8.60068	316	1.39932	9.99966	1	43
18	8.60349	313	8.60384	314	1.39616	9.99965	1	42
19	8.60662	311	8.60698	311	1.39302	9.99964	0	41
20	8.60973	309	8.61009	310	1.38991	9.99964	1	40
21	8.61282	307	8.61319	307	1.38681	9.99963	0	39
22	8.61589	305	8.61626	305	1.38374	9.99963	1	38
23	8.61894	302	8.61931	303	1.38069	9.99962	0	37
24	8.62196	301	8.62234	301	1.37766	9.99962	1	36
25	8.62497	298	8.62535	299	1.37465	9.99961	0	35
26	8.62795	296	8.62834	297	1.37166	9.99961	1	34
27	8.63091	294	8.63131	295	1.36869	9.99960	0	33
28	8.63385	293	8.63426	292	1.36574	9.99960	1	32
29	8.63678	290	8.63718	291	1.36282	9.99959	0	31
30	8.63968	288	8.64009	289	1.35991	9.99959	1	30
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

87°

2°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**8.63968**		**8.64009**		**1.35991**	**9.99959**		**30**
		288		289			1	
31	8.64256		8.64298		1.35702	9.99958		29
		287		287			0	
32	8.64543		8.64585		1.35415	9.99958		28
		284		285			1	
33	8.64827		8.64870		1.35130	9.99957		27
		283		284			1	
34	8.65110		8.65154		1.34846	9.99956		26
		281		281			0	
35	**8.65391**		**8.65435**		**1.34565**	**9.99956**		**25**
		279		280			1	
36	8.65670		8.65715		1.34285	9.99955		24
		277		278			0	
37	8.65947		8.65993		1.34007	9.99955		23
		276		276			1	
38	8.66223		8.66269		1.33731	9.99954		22
		274		274			0	
39	8.66497		8.66543		1.33457	9.99954		21
		272		273			1	
40	**8.66769**		**8.66816**		**1.33184**	**9.99953**		**20**
		270		271			1	
41	8.67039		8.67087		1.32913	9.99952		19
		269		269			0	
42	8.67308		8.67356		1.32644	9.99952		18
		267		268			1	
43	8.67575		8.67624		1.32376	9.99951		17
		266		266			0	
44	8.67841		8.67890		1.32110	9.99951		16
		263		264			1	
45	**8.68104**		**8.68154**		**1.31846**	**9.99950**		**15**
		263		263			1	
46	8.68367		8.68417		1.31583	9.99949		14
		260		261			0	
47	8.68627		8.68678		1.31322	9.99949		13
		259		260			1	
48	8.68886		8.68938		1.31062	9.99948		12
		258		258			0	
49	8.69144		8.69196		1.30804	9.99948		11
		256		257			1	
50	**8.69400**		**8.69453**		**1.30547**	**9.99947**		**10**
		254		255			1	
51	8.69654		8.69708		1.30292	9.99946		9
		253		254			0	
52	8.69907		8.69962		1.30038	9.99946		8
		252		252			1	
53	8.70159		8.70214		1.29786	9.99945		7
		250		251			1	
54	8.70409		8.70465		1.29535	9.99944		6
		249		249			0	
55	**8.70658**		**8.70714**		**1.29286**	**9.99944**		**5**
		247		248			1	
56	8.70905		8.70962		1.29038	9.99943		4
		246		246			1	
57	8.71151		8.71208		1.28792	9.99942		3
		244		245			0	
58	8.71395		8.71453		1.28547	9.99942		2
		243		244			1	
59	8.71638		8.71697		1.28303	9.99941		1
		242		243			1	
60	**8.71880**		**8.71940**		**1.28060**	**9.99940**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

87°

3°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**8.71880**		**8.71940**		**1.28060**	**9.99940**		**60**
		240		241			0	
1	8.72120		8.72181		1.27819	9.99940		59
		239		239			1	
2	8.72359		8.72420		1.27580	9.99939		58
		238		239			1	
3	8.72597		8.72659		1.27341	9.99938		57
		237		237			0	
4	8.72834		8.72896		1.27104	9.99938		56
		235		236			1	
5	**8.73069**		**8.73132**		**1.26868**	**9.99937**		**55**
		234		234			1	
6	8.73303		8.73366		1.26634	9.99936		54
		232		234			0	
7	8.73535		8.73600		1.26400	9.99936		53
		232		232			1	
8	8.73767		8.73832		1.26168	9.99935		52
		230		231			1	
9	8.73997		8.74063		1.25937	9.99934		51
		229		229			0	
10	**8.74226**		**8.74292**		**1.25708**	**9.99934**		**50**
		228		229			1	
11	8.74454		8.74521		1.25479	9.99933		49
		226		227			1	
12	8.74680		8.74748		1.25252	9.99932		48
		226		226			0	
13	8.74906		8.74974		1.25026	9.99932		47
		224		225			1	
14	8.75130		8.75199		1.24801	9.99931		46
		223		224			1	
15	**8.75353**		**8.75423**		**1.24577**	**9.99930**		**45**
		222		222			1	
16	8.75575		8.75645		1.24355	9.99929		44
		220		222			0	
17	8.75795		8.75867		1.24133	9.99929		43
		220		220			1	
18	8.76015		8.76087		1.23913	9.99928		42
		219		219			1	
19	8.76234		8.76306		1.23694	9.99927		41
		217		219			1	
20	**8.76451**		**8.76525**		**1.23475**	**9.99926**		**40**
		216		217			0	
21	8.76667		8.76742		1.23258	9.99926		39
		216		216			1	
22	8.76883		8.76958		1.23042	9.99925		38
		214		215			1	
23	8.77097		8.77173		1.22827	9.99924		37
		213		214			1	
24	8.77310		8.77387		1.22613	9.99923		36
		212		213			0	
25	**8.77522**		**8.77600**		**1.22400**	**9.99923**		**35**
		211		211			1	
26	8.77733		8.77811		1.22189	9.99922		34
		210		211			1	
27	8.77943		8.78022		1.21978	9.99921		33
		209		210			1	
28	8.78152		8.78232		1.21768	9.99920		32
		208		209			0	
29	8.78360		8.78441		1.21559	9.99920		31
		208		208			1	
30	**8.78568**		**8.78649**		**1.21351**	**9.99919**		**30**
		206		206			1	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds		
	240	238
6	24.0	23.8
7	28.0	27.8
8	32.0	31.7
9	36.0	35.7
10	40.0	39.7
20	80.0	79.3
30	120.0	119.0
40	160.0	158.7
50	200.0	198.3
	236	234
6	23.6	23.4
7	27.5	27.3
8	31.5	31.2
9	35.4	35.1
10	39.3	39.0
20	78.7	78.0
30	118.0	117.0
40	157.3	156.0
50	196.7	195.0
	232	230
6	23.2	23.0
7	27.1	26.8
8	30.9	30.7
9	34.8	34.5
10	38.7	38.3
20	77.3	76.7
30	116.0	115.0
40	154.7	153.3
50	193.3	191.7
	228	226
6	22.8	22.6
7	26.6	26.4
8	30.4	30.1
9	34.2	33.9
10	38.0	37.7
20	76.0	75.3
30	114.0	113.0
40	152.0	150.7
50	190.0	188.3
	224	222
6	22.4	22.2
7	26.1	25.9
8	29.9	29.6
9	33.6	33.3
10	37.3	37.0
20	74.7	74.0
30	112 0	111.0
40	149.3	148.0
50	186.7	185.0
	220	218
6	22.0	21.8
7	25.7	25.4
8	29.3	29.1
9	33.0	32.7
10	36.7	36.3
20	73.3	72.7
30	110.0	109.0
40	146.7	145.3
50	183.3	181.7
PP.		

86°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**8.78568**	206	**8.78649**	206	**1.21351**	**9.99919**	1	**30**
31	8.78774	205	8.78855	206	1.21145	9.99918	1	29
32	8.78979	204	8.79061	205	1.20939	9.99917	0	28
33	8.79183	203	8.79266	204	1.20734	9.99917	1	27
34	8.79386	202	8.79470	203	1.20530	9.99916	1	26
35	**8.79588**	201	**8.79673**	202	**1.20327**	**9.99915**	1	**25**
36	8.79789	201	8.79875	201	1.20125	9.99914	1	24
37	8.79990	199	8.80076	201	1.19924	9.99913	0	23
38	8.80189	199	8.80277	199	1.19723	9.99913	1	22
39	8.80388	197	8.80476	198	1.19524	9.99912	1	21
40	**8.80585**	197	**8.80674**	198	**1.19326**	**9.99911**	1	**20**
41	8.80782	196	8.80872	196	1.19128	9.99910	1	19
42	8.80978	195	8.81068	196	1.18932	9.99909	0	18
43	8.81173	194	8.81264	195	1.18736	9.99909	1	17
44	8.81367	193	8.81459	194	1.18541	9.99908	1	16
45	**8.81560**	192	**8.81653**	193	**1.18347**	**9.99907**	1	**15**
46	8.81752	192	8.81846	192	1.18154	9.99906	1	14
47	8.81944	190	8.82038	192	1.17962	9.99905	1	13
48	8.82134	190	8.82230	190	1.17770	9.99904	0	12
49	8.82324	189	8.82420	190	1.17580	9.99904	1	11
50	**8.82513**	188	**8.82610**	189	**1.17390**	**9.99903**	1	**10**
51	8.82701	187	8.82799	188	1.17201	9.99902	1	9
52	8.82888	187	8.82987	188	1.17013	9.99901	1	8
53	8.83075	186	8.83175	186	1.16825	9.99900	1	7
54	8.83261	185	8.83361	186	1.16639	9.99899	1	6
55	**8.83446**	184	**8.83547**	185	**1.16453**	**9.99898**	0	**5**
56	8.83630	183	8.83732	184	1.16268	9.99898	1	4
57	8.83813	183	8.83916	184	1.16084	9.99897	1	3
58	8.83996	181	8.84100	182	1.15900	9.99896	1	2
59	8.84177	181	8.84282	182	1.15718	9.99895	1	1
60	**8.84358**		**8.84464**		**1.15536**	**9.99894**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds	216	214
6	21.6	21.4
7	25.2	25.0
8	28.8	28.5
9	32.4	32.1
10	36.0	35.7
20	72.0	71.3
30	108.0	107.0
40	144.0	142.7
50	180.0	178.3
	212	210
6	21.2	21.0
7	24.7	24.5
8	28.3	28.0
9	31.8	31.5
10	35.3	35.0
20	70.7	70.0
30	106.0	105.0
40	141.3	140.0
50	176.7	175.0
	208	206
6	20.8	20.6
7	24.3	24.0
8	27.7	27.5
9	31.2	30.9
10	34.7	34.3
20	69.3	68.7
30	104.0	103.0
40	138.7	137.3
50	173.3	171.7
	204	202
6	20.4	20.2
7	23.8	23.6
8	27.2	26.9
9	30.6	30.3
10	34.0	33.7
20	68.0	67.3
30	102.0	101.0
40	136.0	134.7
50	170.0	168.3
	200	198
6	20.0	19.8
7	23.3	23.1
8	26.7	26.4
9	30.0	29.7
10	33.3	33.0
20	66.7	66.0
30	100.0	99.0
40	133.3	132.0
50	166.7	165.0
	196	194
6	19.6	19.4
7	22.9	22.6
8	26.1	25.9
9	29.4	29.1
10	32.7	32.3
20	65.3	64.7
30	98.0	97.0
40	130.7	129.3
50	163.3	161.7
PP.		

4°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**8.84358**		**8.84464**		**1.15536**	**9.99894**		**60**
		181		182			1	
1	8.84539		8.84646		1.15354	9.99893		59
		179		180			1	
2	8.84718		8.84826		1.15174	9.99892		58
		179		180			1	
3	8.84897		8.85006		1.14994	9.99891		57
		178		179			0	
4	8.85075		8.85185		1.14815	9.99891		56
		177		178			1	
5	**8.85252**		**8.85363**		**1.14637**	**9.99890**		**55**
		177		177			1	
6	8.85429		8.85540		1.14460	9.99889		54
		176		177			1	
7	8.85605		8.85717		1.14283	9.99888		53
		175		176			1	
8	8.85780		8.85893		1.14107	9.99887		52
		175		176			1	
9	8.85955		8.86069		1.13931	9.99886		51
		173		174			1	
10	**8.86128**		**8.86243**		**1.13757**	**9.99885**		**50**
		173		174			1	
11	8.86301		8.86417		1.13583	9.99884		49
		173		174			1	
12	8.86474		8.86591		1.13409	9.99883		48
		171		172			1	
13	8.86645		8.86763		1.13237	9.99882		47
		171		172			1	
14	8.86816		8.86935		1.13065	9.99881		46
		171		171			1	
15	**8.86987**		**8.87106**		**1.12894**	**9.99880**		**45**
		169		171			1	
16	8.87156		8.87277		1.12723	9.99879		44
		169		170			0	
17	8.87325		8.87447		1.12553	9.99879		43
		169		169			1	
18	8.87494		8.87616		1.12384	9.99878		42
		167		169			1	
19	8.87661		8.87785		1.12215	9.99877		41
		168		168			1	
20	**8.87829**		**8.87953**		**1.12047**	**9.99876**		**40**
		166		167			1	
21	8.87995		8.88120		1.11880	9.99875		39
		166		167			1	
22	8.88161		8.88287		1.11713	9.99874		38
		165		166			1	
23	8.88326		8.88453		1.11547	9.99873		37
		164		165			1	
24	8.88490		8.88618		1.11382	9.99872		36
		164		165			1	
25	**8.88654**		**8.88783**		**1.11217**	**9.99871**		**35**
		163		165			1	
26	8.88817		8.88948		1.11052	9.99870		34
		163		163			1	
27	8.88980		8.89111		1.10889	9.99869		33
		162		163			1	
28	8.89142		8.89274		1.10726	9.99868		32
		162		163			1	
29	8.89304		8.89437		1.10563	9.99867		31
		160		161			1	
30	**8.89464**		**8.89598**		**1.10402**	**9.99866**		**30**
		161		162			1	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds		
	192	190
6	19.2	19.0
7	22.4	22.2
8	25.6	25.3
9	28.8	28.5
10	32.0	31.7
20	64.0	63.3
30	96.0	95.0
40	128.0	126.7
50	160.0	158.3
	188	186
6	18.8	18.6
7	21.9	21.7
8	25.1	24.8
9	28.2	27.9
10	31.3	31.0
20	62.7	62.0
30	94.0	93.0
40	125.3	124.0
50	156.7	155.0
	184	182
6	18.4	18.2
7	21.5	21.2
8	24.5	24.3
9	27.6	27.3
10	30.7	30.3
20	61.3	60.7
30	92.0	91.0
40	122.7	121.3
50	153.3	151.7
	180	178
6	18.0	17.8
7	21.0	20.8
8	24.0	23.7
9	27.0	26.7
10	30.0	29.7
20	60.0	59.3
30	90.0	89.0
40	120.0	118.7
50	150.0	148.3
	176	174
6	17.6	17.4
7	20.5	20.3
8	23.5	23.2
9	26.4	26.1
10	29.3	29.0
20	58.7	58.0
30	88.0	87.0
40	117.3	116.0
50	146.7	145.0
	172	170
6	17.2	17.0
7	20.1	19.8
8	22.9	22.7
9	25.8	25.5
10	28.7	28.3
20	57.3	56.7
30	86.0	85.0
40	114.7	113.3
50	143.3	141.7
PP.		

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4°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**8.89464**		**8.89598**		**1.10402**	**9.99866**		**30**
		161		162			1	
31	8.89625		8.89760		1.10240	9.99865		29
		159		160			1	
32	8.89784		8.89920		1.10080	9.99864		28
		159		160			1	
33	8.89943		8.90080		1.09920	9.99863		27
		159		160			1	
34	8.90102		8.90240		1.09760	9.99862		26
		158		159			1	
35	**8.90260**		**8.90399**		**1.09601**	**9.99861**		**25**
		157		158			1	
36	8.90417		8.90557		1.09443	9.99860		24
		157		158			1	
37	8.90574		8.90715		1.09285	9.99859		23
		156		157			1	
38	8.90730		8.90872		1.09128	9.99858		22
		155		157			1	
39	8.90885		8.91029		1.08971	9.99857		21
		155		156			1	
40	**8.91040**		**8.91185**		**1.08815**	**9.99856**		**20**
		155		155			1	
41	8.91195		8.91340		1.08660	9.99855		19
		154		155			1	
42	8.91349		8.91495		1.08505	9.99854		18
		153		155			1	
43	8.91502		8.91650		1.08350	9.99853		17
		153		153			1	
44	8.91655		8.91803		1.08197	9.99852		16
		152		154			1	
45	**8.91807**		**8.91957**		**1.08043**	**9.99851**		**15**
		152		153			1	
46	8.91959		8.92110		1.07890	9.99850		14
		151		152			2	
47	8.92110		8.92262		1.07738	9.99848		13
		151		152			1	
48	8.92261		8.92414		1.07586	9.99847		12
		150		151			1	
49	8.92411		8.92565		1.07435	9.99846		11
		150		151			1	
50	**8.92561**		**8.92716**		**1.07284**	**9.99845**		**10**
		149		150			1	
51	8.92710		8.92866		1.07134	9.99844		9
		149		150			1	
52	8.92859		8.93016		1.06984	9.99843		8
		148		149			1	
53	8.93007		8.93165		1.06835	9.99842		7
		147		148			1	
54	8.93154		8.93313		1.06687	9.99841		6
		147		149			1	
55	**8.93301**		**8.93462**		**1.06538**	**9.99840**		**5**
		147		147			1	
56	8.93448		8.93609		1.06391	9.99839		4
		146		147			1	
57	8.93594		8.93756		1.06244	9.99838		3
		146		147			1	
58	8.93740		8.93903		1.06097	9.99837		2
		145		146			1	
59	8.93885		8.94049		1.05951	9.99836		1
		145		146			2	
60	**8.94030**		**8.94195**		**1.05805**	**9.99834**		**0**
		144		145			1	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds	168	166
6	16.8	16.6
7	19.6	19.4
8	22.4	22.1
9	25.2	24.9
10	28.0	27.7
20	56.0	55.3
30	84.0	83.0
40	112.0	110.7
50	140.0	138.3
	164	162
6	16.4	16.2
7	19.1	18.9
8	21.9	21.6
9	24.6	24.3
10	27.3	27.0
20	54.7	54.0
30	82.0	81.0
40	109.3	108.0
50	136.7	135.0
	160	158
6	16.0	15.8
7	18.7	18.4
8	21.3	21.1
9	24.0	23.7
10	26.7	26.3
20	53.3	52.7
30	80.0	79.0
40	106.7	105.3
50	133.3	131.7
	156	154
6	15.6	15.4
7	18.2	18.0
8	20.8	20.5
9	23.4	23.1
10	26.0	25.7
20	52.0	51.3
30	78.0	77.0
40	104.0	102.7
50	130.0	128.3
	152	150
6	15.2	15.0
7	17.7	17.5
8	20.3	20.0
9	22.8	22.5
10	25.3	25.0
20	50.7	50.0
30	76.0	75.0
40	101.3	100.0
50	126.7	125.0
	148	146
6	14.8	14.6
7	17.3	17.0
8	19.7	19.5
9	22.2	21.9
10	24.7	24.3
20	49.3	48.7
30	74.0	73.0
40	98.7	97.3
50	123.3	121.7
PP.		

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5°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**8.94030**		**8.94195**		**1.05805**	**9.99834**		**60**
		144		145			1	
1	8.94174		8.94340		1.05660	9.99833		59
		143		145			1	
2	8.94317		8.94485		1.05515	9.99832		58
		144		145			1	
3	8.94461		8.94630		1.05370	9.99831		57
		142		143			1	
4	8.94603		8.94773		1.05227	9.99830		56
		143		144			1	
5	**8.94746**		**8.94917**		**1.05083**	**9.99829**		**55**
		141		143			1	
6	8.94887		8.95060		1.04940	9.99828		54
		142		142			1	
7	8.95029		8.95202		1.04798	9.99827		53
		141		142			2	
8	8.95170		8.95344		1.04656	9.99825		52
		140		142			1	
9	8.95310		8.95486		1.04514	9.99824		51
		140		141			1	
10	**8.95450**		**8.95627**		**1.04373**	**9.99823**		**50**
		139		140			1	
11	8.95589		8.95767		1.04233	9.99822		49
		139		141			1	
12	8.95728		8.95908		1.04092	9.99821		48
		139		139			1	
13	8.95867		8.96047		1.03953	9.99820		47
		138		140			1	
14	8.96005		8.96187		1.03813	9.99819		46
		138		138			2	
15	**8.96143**		**8.96325**		**1.03675**	**9.99817**		**45**
		137		139			1	
16	8.96280		8.96464		1.03536	9.99816		44
		137		138			1	
17	8.96417		8.96602		1.03398	9.99815		43
		136		137			1	
18	8.96553		8.96739		1.03261	9.99814		42
		136		138			1	
19	8.96689		8.96877		1.03123	9.99813		41
		136		136			1	
20	**8.96825**		**8.97013**		**1.02987**	**9.99812**		**40**
		135		137			2	
21	8.96960		8.97150		1.02850	9.99810		39
		135		135			1	
22	8.97095		8.97285		1.02715	9.99809		38
		134		136			1	
23	8.97229		8.97421		1.02579	9.99808		37
		134		135			1	
24	8.97363		8.97556		1.02444	9.99807		36
		133		135			1	
25	**8.97496**		**8.97691**		**1.02309**	**9.99806**		**35**
		133		134			2	
26	8.97629		8.97825		1.02175	9.99804		34
		133		134			1	
27	8.97762		8.97959		1.02041	9.99803		33
		132		133			1	
28	8.97894		8.98092		1.01908	9.99802		32
		132		133			1	
29	8.98026		8.98225		1.01775	9.99801		31
		131		133			1	
30	**8.98157**		**8.98358**		**1.01642**	**9.99800**		**30**
		131		132			2	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	146	144
1	2.4	2.4
2	4.9	4.8
3	7.3	7.2
4	9.7	9.6
5	12.2	12.0
6	14.6	14.4
7	17.0	16.8
8	19.5	19.2
9	21.9	21.6
10	24.3	24.0
20	48.7	48.0
30	73.0	72.0
40	97.3	96.0
50	121.7	120.0

	142	140
1	2.4	2.3
2	4.7	4.7
3	7.1	7.0
4	9.5	9.3
5	11.8	11.7
6	14.2	14.0
7	16.6	16.3
8	18.9	18.7
9	21.3	21.0
10	23.7	23.3
20	47.3	46.7
30	71.0	70.0
40	94.7	93.3
50	118.3	116.7

	138	136
1	2.3	2.3
2	4.6	4.5
3	6.9	6.8
4	9.2	9.1
5	11.5	11.3
6	13.8	13.6
7	16.1	15.9
8	18.4	18.1
9	20.7	20.4
10	23.0	22.7
20	46.0	45.3
30	69.0	68.0
40	92.0	90.7
50	115.0	113.3

	134	132
1	2.2	2.2
2	4.5	4.4
3	6.7	6.6
4	8.9	8.8
5	11.2	11.0
6	13.4	13.2
7	15.6	15.4
8	17.9	17.6
9	20.1	19.8
10	22.3	22.0
20	44.7	44.0
30	67.0	66.0
40	89.3	88.0
50	111.7	110.0

PP.

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5°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**8.98157**	131	**8.98358**	132	**1.01642**	**9.99800**	2	**30**
31	8.98288	131	8.98490	132	1.01510	9.99798	1	29
32	8.98419	130	8.98622	131	1.01378	9.99797	1	28
33	8.98549	130	8.98753	131	1.01247	9.99796	1	27
34	8.98679	129	8.98884	131	1.01116	9.99795	2	26
35	**8.98808**	129	**8.99015**	130	**1.00985**	**9.99793**	1	**25**
36	8.98937	129	8.99145	130	1.00855	9.99792	1	24
37	8.99066	128	8.99275	130	1.00725	9.99791	1	23
38	8.99194	128	8.99405	129	1.00595	9.99790	2	22
39	8.99322	128	8.99534	128	1.00466	9.99788	1	21
40	**8.99450**	127	**8.99662**	129	**1.00338**	**9.99787**	1	**20**
41	8.99577	127	8.99791	128	1.00209	9.99786	1	19
42	8.99704	126	8.99919	127	1.00081	9.99785	2	18
43	8.99830	126	9.00046	128	0.99954	9.99783	1	17
44	8.99956	126	9.00174	127	0.99826	9.99782	1	16
45	**9.00082**	125	**9.00301**	126	**0.99699**	**9.99781**	1	**15**
46	9.00207	125	9.00427	126	0.99573	9.99780	2	14
47	9.00332	124	9.00553	126	0.99447	9.99778	1	13
48	9.00456	125	9.00679	126	0.99321	9.99777	1	12
49	9.00581	123	9.00805	125	0.99195	9.99776	1	11
50	**9.00704**	124	**9.00930**	125	**0.99070**	**9.99775**	2	**10**
51	9.00828	123	9.01055	124	0.98945	9.99773	1	9
52	9.00951	123	9.01179	124	0.98821	9.99772	1	8
53	9.01074	122	9.01303	124	0.98697	9.99771	2	7
54	9.01196	122	9.01427	123	0.98573	9.99769	1	6
55	**9.01318**	122	**9.01550**	123	**0.98450**	**9.99768**	1	**5**
56	9.01440	121	9.01673	123	0.98327	9.99767	2	4
57	9.01561	121	9.01796	122	0.98204	9.99765	1	3
58	9.01682	121	9.01918	122	0.98082	9.99764	1	2
59	9.01803	120	9.02040	122	0.97960	9.99763	2	1
60	**9.01923**	120	**9.02162**	121	**0.97838**	**9.99761**	1	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	134	132
1	2.2	2.2
2	4.5	4.4
3	6.7	6.6
4	8.9	8.8
5	11.2	11.0
6	13.4	13.2
7	15.6	15.4
8	17.9	17.6
9	20.1	19.8
10	22.3	22.0
20	44.7	44.0
30	67.0	66.0
40	89.3	88.0
50	111.7	110.0

	130	128
1	2.2	2.1
2	4.3	4.3
3	6.5	6.4
4	8.7	8.5
5	10.8	10.7
6	13.0	12.8
7	15.2	14.9
8	17.3	17.1
9	19.5	19.2
10	21.7	21.3
20	43.3	42.7
30	65.0	64.0
40	86.7	85.3
50	108.3	106.7

	126	124
1	2.1	2.1
2	4.2	4.1
3	6.3	6.2
4	8.4	8.3
5	10.5	10.3
6	12.6	12.4
7	14.7	14.5
8	16.8	16.5
9	18.9	18.6
10	21.0	20.7
20	42.0	41.3
30	63.0	62.0
40	84.0	82.7
50	105.0	103.3

	122	120
1	2.0	2.0
2	4.1	4.0
3	6.1	6.0
4	8.1	8.0
5	10.2	10.0
6	12.2	12.0
7	14.2	14.0
8	16.3	16.0
9	18.3	18.0
10	20.3	20.0
20	40.7	40.0
30	61.0	60.0
40	81.3	80.0
50	101.7	100.0

PP.

84°

6°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.01923**	120	**9.02162**	121	**0.97838**	**9.99761**	1	**60**
1	9.02043	120	9.02283	121	0.97717	9.99760	1	59
2	9.02163	120	9.02404	121	0.97596	9.99759	2	58
3	9.02283	119	9.02525	120	0.97475	9.99757	1	57
4	9.02402	118	9.02645	121	0.97355	9.99756	1	56
5	**9.02520**	119	**9.02766**	119	**0.97234**	**9.99755**	2	**55**
6	9.02639	118	9.02885	120	0.97115	9.99753	1	54
7	9.02757	117	9.03005	119	0.96995	9.99752	1	53
8	9.02874	118	9.03124	118	0.96876	9.99751	2	52
9	9.02992	117	9.03242	119	0.96758	9.99749	1	51
10	**9.03109**	117	**9.03361**	118	**0.96639**	**9.99748**	1	**50**
11	9.03226	116	9.03479	118	0.96521	9.99747	2	49
12	9.03342	116	9.03597	117	0.96403	9.99745	1	48
13	9.03458	116	9.03714	118	0.96286	9.99744	2	47
14	9.03574	116	9.03832	116	0.96168	9.99742	1	46
15	**9.03690**	115	**9.03948**	117	**0.96052**	**9.99741**	1	**45**
16	9.03805	115	9.04065	116	0.95935	9.99740	2	44
17	9.03920	114	9.04181	116	0.95819	9.99738	1	43
18	9.04034	115	9.04297	116	0.95703	9.99737	1	42
19	9.04149	113	9.04413	115	0.95587	9.99736	2	41
20	**9.04262**	114	**9.04528**	115	**0.95472**	**9.99734**	1	**40**
21	9.04376	114	9.04643	115	0.95357	9.99733	2	39
22	9.04490	113	9.04758	115	0.95242	9.99731	1	38
23	9.04603	112	9.04873	114	0.95127	9.99730	2	37
24	9.04715	113	9.04987	114	0.95013	9.99728	1	36
25	**9.04828**	112	**9.05101**	113	**0.94899**	**9.99727**	1	**35**
26	9.04940	112	9.05214	114	0.94786	9.99726	2	34
27	9.05052	112	9.05328	113	0.94672	9.99724	1	33
28	9.05164	111	9.05441	112	0.94559	9.99723	2	32
29	9.05275	111	9.05553	113	0.94447	9.99721	1	31
30	**9.05386**	111	**9.05666**	112	**0.94334**	**9.99720**	2	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	120	119
1	2.0	2.0
2	4.0	4.0
3	6.0	6.0
4	8.0	7.9
5	10.0	9.9
6	12.0	11.9
7	14.0	13.9
8	16.0	15.9
9	18.0	17.9
10	20.0	19.8
20	40.0	39.7
30	60.0	59.5
40	80.0	79.3
50	100.0	99.2

	118	117
1	2.0	2.0
2	3.9	3.9
3	5.9	5.9
4	7.9	7.8
5	9.8	9.8
6	11.8	11.7
7	13.8	13.7
8	15.7	15.6
9	17.7	17.6
10	19.7	19.5
20	39.3	39.0
30	59.0	58.5
40	78.7	78.0
50	98.3	97.5

	116	115
1	1.9	1.9
2	3.9	3.8
3	5.8	5.8
4	7.7	7.7
5	9.7	9.6
6	11.6	11.5
7	13.5	13.4
8	15.5	15.3
9	17.4	17.3
10	19.3	19.2
20	38.7	38.3
30	58.0	57.5
40	77.3	76.7
50	96.7	95.8

	114	113
1	1.9	1.9
2	3.8	3.8
3	5.7	5.7
4	7.6	7.5
5	9.5	9.4
6	11.4	11.3
7	13.3	13.2
8	15.2	15.1
9	17.1	17.0
10	19.0	18.8
20	38.0	37.7
30	57.0	56.5
40	76.0	75.3
50	95.0	94.2

PP.

83°

6°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.05386**	111	**9.05666**	112	**0.94334**	**9.99720**	2	**30**
31	9.05497	110	9.05778	112	0.94222	9.99718	1	29
32	9.05607	110	9.05890	112	0.94110	9.99717	1	28
33	9.05717	110	9.06002	111	0.93998	9.99716	2	27
34	9.05827	110	9.06113	111	0.93887	9.99714	1	26
35	**9.05937**	109	**9.06224**	111	**0.93776**	**9.99713**	2	**25**
36	9.06046	109	9.06335	110	0.93665	9.99711	1	24
37	9.06155	109	9.06445	111	0.93555	9.99710	2	23
38	9.06264	108	9.06556	110	0.93444	9.99708	1	22
39	9.06372	109	9.06666	109	0.93334	9.99707	2	21
40	**9.06481**	108	**9.06775**	110	**0.93225**	**9.99705**	1	**20**
41	9.06589	107	9.06885	109	0.93115	9.99704	2	19
42	9.06696	108	9.06994	109	0.93006	9.99702	1	18
43	9.06804	107	9.07103	108	0.92897	9.99701	2	17
44	9.06911	107	9.07211	109	0.92789	9.99699	1	16
45	**9.07018**	106	**9.07320**	108	**0.92680**	**9.99698**	2	**15**
46	9.07124	107	9.07428	108	0.92572	9.99696	1	14
47	9.07231	106	9.07536	107	0.92464	9.99695	2	13
48	9.07337	105	9.07643	108	0.92357	9.99693	1	12
49	9.07442	106	9.07751	107	0.92249	9.99692	2	11
50	**9.07548**	105	**9.07858**	106	**0.92142**	**9.99690**	1	**10**
51	9.07653	105	9.07964	107	0.92036	9.99689	2	9
52	9.07758	105	9.08071	106	0.91929	9.99687	1	8
53	9.07863	105	9.08177	106	0.91823	9.99686	2	7
54	9.07968	104	9.08283	106	0.91717	9.99684	1	6
55	**9.08072**	104	**9.08389**	106	**0.91611**	**9.99683**	2	**5**
56	9.08176	104	9.08495	105	0.91505	9.99681	1	4
57	9.08280	103	9.08600	105	0.91400	9.99680	2	3
58	9.08383	103	9.08705	105	0.91295	9.99678	1	2
59	9.08486	103	9.08810	104	0.91190	9.99677	2	1
60	**9.08589**	103	**9.08914**	105	**0.91086**	**9.99675**	1	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	112	111
1	1.9	1.9
2	3.7	3.7
3	5.6	5.6
4	7.5	7.4
5	9.3	9.3
6	11.2	11.1
7	13.1	13.0
8	14.9	14.8
9	16.8	16.7
10	18.7	18.5
20	37.3	37.0
30	56.0	55.5
40	74.7	74.0
50	93.3	92.5

	110	109
1	1.8	1.8
2	3.7	3.6
3	5.5	5.5
4	7.3	7.3
5	9.2	9.1
6	11.0	10.9
7	12.8	12.7
8	14.7	14.5
9	16.5	16.4
10	18.3	18.2
20	36.7	36.3
30	55.0	54.5
40	73.3	72.7
50	91.7	90.8

	108	107
1	1.8	1.8
2	3.6	3.6
3	5.4	5.4
4	7.2	7.1
5	9.0	8.9
6	10.8	10.7
7	12.6	12.5
8	14.4	14.3
9	16.2	16.1
10	18.0	17.8
20	36.0	35.7
30	54.0	53.5
40	72.0	71.3
50	90.0	89.2

	106	105
1	1.8	1.8
2	3.5	3.5
3	5.3	5.3
4	7.1	7.0
5	8.8	8.8
6	10.6	10.5
7	12.4	12.3
8	14.1	14.0
9	15.9	15.8
10	17.7	17.5
20	35.3	35.0
30	53.0	52.5
40	70.7	70.0
50	88.3	87.5

PP.

83°

7°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.08589**	103	**9.08914**	105	**0.91086**	**9.99675**	1	**60**
1	9.08692	103	9.09019	104	0.90981	9.99674	2	59
2	9.08795	102	9.09123	104	0.90877	9.99672	2	58
3	9.08897	102	9.09227	103	0.90773	9.99670	1	57
4	9.08999	102	9.09330	104	0.90670	9.99669	2	56
5	**9.09101**	101	**9.09434**	103	**0.90566**	**9.99667**	1	**55**
6	9.09202	102	9.09537	103	0.90463	9.99666	2	54
7	9.09304	101	9.09640	102	0.90360	9.99664	1	53
8	9.09405	101	9.09742	103	0.90258	9.99663	2	52
9	9.09506	100	9.09845	102	0.90155	9.99661	2	51
10	**9.09606**	101	**9.09947**	102	**0.90053**	**9.99659**	1	**50**
11	9.09707	100	9.10049	101	0.89951	9.99658	2	49
12	9.09807	100	9.10150	102	0.89850	9.99656	1	48
13	9.09907	99	9.10252	101	0.89748	9.99655	2	47
14	9.10006	100	9.10353	101	0.89647	9.99653	2	46
15	**9.10106**	99	**9.10454**	101	**0.89546**	**9.99651**	1	**45**
16	9.10205	99	9.10555	101	0.89445	9.99650	2	44
17	9.10304	98	9.10656	100	0.89344	9.99648	1	43
18	9.10402	99	9.10756	100	0.89244	9.99647	2	42
19	9.10501	98	9.10856	100	0.89144	9.99645	2	41
20	**9.10599**	98	**9.10956**	100	**0.89044**	**9.99643**	1	**40**
21	9.10697	98	9.11056	99	0.88944	9.99642	2	39
22	9.10795	98	9.11155	99	0.88845	9.99640	2	38
23	9.10893	97	9.11254	99	0.88746	9.99638	1	37
24	9.10990	97	9.11353	99	0.88647	9.99637	2	36
25	9.11087	97	9.11452	99	0.88548	9.99635	2	35
26	9.11184	97	9.11551	98	0.88449	9.99633	1	34
27	9.11281	96	9.11649	98	0.88351	9.99632	2	33
28	9.11377	97	9.11747	98	0.88253	9.99630	1	32
29	9.11474	96	9.11845	98	0.88155	9.99629	2	31
30	**9.11570**	96	**9.11943**	97	**0.88057**	**9.99627**	2	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	105	104
1	1.8	1.7
2	3.5	3.5
3	5.3	5.2
4	7.0	6.9
5	8.8	8.7
6	10.5	10.4
7	12.3	12.1
8	14.0	13.9
9	15.8	15.6
10	17.5	17.3
20	35.0	34.7
30	52.5	52.0
40	70.0	69.3
50	87.5	86.7

	103	102
1	1.7	1.7
2	3.4	3.4
3	5.2	5.1
4	6.9	6.8
5	8.6	8.5
6	10.3	10.2
7	12.0	11.9
8	13.7	13.6
9	15.5	15.3
10	17.2	17.0
20	34.3	34.0
30	51.5	51.0
40	68.7	68.0
50	85.8	85.0

	101	100
1	1.7	1.7
2	3.4	3.3
3	5.1	5.0
4	6.7	6.7
5	8.4	8.3
6	10.1	10.0
7	11.8	11.7
8	13.5	13.3
9	15.2	15.0
10	16.8	16.7
20	33.7	33.3
30	50.5	50.0
40	67.3	66.7
50	84.2	83.3

	99	98
1	1.7	1.6
2	3.3	3.3
3	5.0	4.9
4	6.6	6.5
5	8.3	8.2
6	9.9	9.8
7	11.6	11.4
8	13.2	13.1
9	14.9	14.7
10	16.5	16.3
20	33.0	32.7
30	49.5	49.0
40	66.0	65.3
50	82.5	81.7

PP.

82°

7°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.11570**	96	**9.11943**	97	**0.88057**	**9.99627**	2	**30**
31	9.11666	95	9.12040	98	0.87960	9.99625	1	29
32	9.11761	96	9.12138	97	0.87862	9.99624	2	28
33	9.11857	95	9.12235	97	0.87765	9.99622	2	27
34	9.11952	95	9.12332	96	0.87668	9.99620	2	26
35	**9.12047**	95	**9.12428**	97	**0.87572**	**9.99618**	1	**25**
36	9.12142	94	9.12525	96	0.87475	9.99617	2	24
37	9.12236	95	9.12621	96	0.87379	9.99615	2	23
38	9.12331	94	9.12717	96	0.87283	9.99613	1	22
39	9.12425	94	9.12813	96	0.87187	9 99612	2	21
40	**9.12519**	93	**9.12909**	95	**0.87091**	**9.99610**	2	**20**
41	9.12612	94	9.13004	95	0.86996	9.99608	1	19
42	9.12706	93	9.13099	95	0.86901	9.99607	2	18
43	9.12799	93	9.13194	95	0.86806	9.99605	2	17
44	9.12892	93	9.13289	95	0.86711	9.99603	2	16
45	**9.12985**	93	**9.13384**	94	**0.86616**	**9.99601**	1	**15**
46	9.13078	93	9.13478	95	0.86522	9.99600	2	14
47	9.13171	92	9.13573	94	0.86427	9.99598	2	13
48	9.13263	92	9.13667	94	0.86333	9.99596	1	12
49	9.13355	92	9.13761	93	0.86239	9.99595	2	11
50	**9.13447**	92	**9.13854**	94	**0.86146**	**9.99593**	2	**10**
51	9.13539	91	9.13948	93	0.86052	9.99591	2	9
52	9.13630	92	9.14041	93	0.85959	9.99589	1	8
53	9.13722	91	9.14134	93	0.85866	9.99588	2	7
54	9.13813	91	9.14227	93	0.85773	9.99586	2	6
55	**9.13904**	90	**9.14320**	92	**0.85680**	**9.99584**	2	**5**
56	9.13994	91	9.14412	92	0.85588	9.99582	1	4
57	9.14085	90	9.14504	93	0.85496	9.99581	2	3
58	9.14175	91	9.14597	91	0.85403	9.99579	2	2
59	9.14266	90	9.14688	92	0.85312	9.99577	2	1
60	**9.14356**	89	**9.14780**	92	**0.85220**	**9.99575**	1	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	97	96
1	1.6	1.6
2	3.2	3.2
3	4.9	4.8
4	6.5	6.4
5	8.1	8.0
6	9.7	9.6
7	11.3	11.2
8	12.9	12.8
9	14.6	14.4
10	16.2	16.0
20	32.3	32.0
30	48.5	48.0
40	64.7	64.0
50	80.8	80.0

	95	94
1	1.6	1.6
2	3.2	3.1
3	4.8	4.7
4	6.3	6.3
5	7.9	7.8
6	9.5	9.4
7	11.1	11.0
8	12.7	12.5
9	14.3	14.1
10	15.8	15.7
20	31.7	31.3
30	47.5	47.0
40	63.3	62.7
50	79.2	78.3

	93	92
1	1.6	1.5
2	3.1	3.1
3	4.7	4.6
4	6.2	6.1
5	7.8	7.7
6	9.3	9.2
7	10.9	10.7
8	12.4	12.3
9	14.0	13.8
10	15.5	15.3
20	31.0	30.7
30	46.5	46.0
40	62.0	61.3
50	77.5	76.7

	91	90
1	1.5	1.5
2	3.0	3.0
3	4.6	4.5
4	6.1	6.0
5	7.6	7.5
6	9.1	9.0
7	10.6	10.5
8	12.1	12.0
9	13.7	13.5
10	15.2	15.0
20	30.3	30.0
30	45.5	45.0
40	60.7	60.0
50	75.8	75.0

PP.

82°

8°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.14356**	89	**9.14780**	92	**0.85220**	**9.99575**	1	**60**
1	9.14445	90	9.14872	91	0.85128	9.99574	2	59
2	9.14535	89	9.14963	91	0.85037	9.99572	2	58
3	9.14624	90	9.15054	91	0.84946	9.99570	2	57
4	9.14714	89	9.15145	91	0.84855	9.99568	2	56
5	**9.14803**	88	**9.15236**	91	**0.84764**	**9.99566**	1	**55**
6	9.14891	89	9.15327	90	0.84673	9.99565	2	54
7	9.14980	89	9.15417	91	0.84583	9.99563	2	53
8	9.15069	88	9.15508	90	0.84492	9.99561	2	52
9	9.15157	88	9.15598	90	0.84402	9.99559	2	51
10	**9.15245**	88	**9.15688**	89	**0.84312**	**9.99557**	1	**50**
11	9.15333	88	9.15777	90	0.84223	9.99556	2	49
12	9.15421	87	9.15867	89	0.84133	9.99554	2	48
13	9.15508	88	9.15956	90	0.84044	9.99552	2	47
14	9.15596	87	9.16046	89	0.83954	9.99550	2	46
15	**9.15683**	87	**9.16135**	89	**0.83865**	**9.99548**	2	**45**
16	9.15770	87	9.16224	88	0.83776	9.99546	1	44
17	9.15857	87	9.16312	89	0.83688	9.99545	2	43
18	9.15944	86	9.16401	88	0.83599	9.99543	2	42
19	9.16030	86	9.16489	88	0.83511	9.99541	2	41
20	**9.16116**	87	**9.16577**	88	**0.83423**	**9.99539**	2	**40**
21	9.16203	86	9.16665	88	0.83335	9.99537	2	39
22	9.16289	85	9.16753	88	0.83247	9.99535	2	38
23	9.16374	86	9.16841	87	0.83159	9.99533	1	37
24	9.16460	85	9.16928	88	0.83072	9.99532	2	36
25	**9.16545**	86	**9.17016**	87	**0.82984**	**9.99530**	2	**35**
26	9.16631	85	9.17103	87	0.82897	9.99528	2	34
27	9.16716	85	9.17190	87	0.82810	9.99526	2	33
28	9.16801	85	9.17277	86	0.82723	9.99524	2	32
29	9.16886	84	9.17363	87	0.82637	9.99522	2	31
30	**9.16970**	85	**9.17450**	86	**0.82550**	**9.99520**	2	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	92	91
1	1.5	1.5
2	3.1	3.0
3	4.6	4.6
4	6.1	6.1
5	7.7	7.6
6	9.2	9.1
7	10.7	10.6
8	12.3	12.1
9	13.8	13.7
10	15.3	15.2
20	30.7	30.3
30	46.0	45.5
40	61.3	60.7
50	76.7	75.8

	90	89
1	1.5	1.5
2	3.0	3.0
3	4.5	4.5
4	6.0	5.9
5	7.5	7.4
6	9.0	8.9
7	10.5	10.4
8	12.0	11.9
9	13.5	13.4
10	15.0	14.8
20	30.0	29.7
30	45.0	44.5
40	60.0	59.3
50	75.0	74.2

	88	87
1	1.5	1.5
2	2.9	2.9
3	4.4	4.4
4	5.9	5.8
5	7.3	7.3
6	8.8	8.7
7	10.3	10.2
8	11.7	11.6
9	13.2	13.1
10	14.7	14.5
20	29.3	29.0
30	44.0	43.5
40	58.7	58.0
50	73.3	72.5

PP.

81°

8°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.16970**	85	**9.17450**	86	**0.82550**	**9.99520**	2	**30**
31	9.17055	84	9.17536	86	0.82464	9.99518	1	29
32	9.17139	84	9.17622	86	0.82378	9.99517	2	28
33	9.17223	84	9.17708	86	0.82292	9.99515	2	27
34	9.17307	84	9.17794	86	0.82206	9.99513	2	26
35	**9.17391**	83	**9.17880**	85	**0.82120**	**9.99511**	2	**25**
36	9.17474	84	9.17965	86	0.82035	9.99509	2	24
37	9.17558	83	9.18051	85	0.81949	9.99507	2	23
38	9.17641	83	9.18136	85	0.81864	9.99505	2	22
39	9.17724	83	9.18221	85	0.81779	9.99503	2	21
40	**9.17807**	83	**9.18306**	85	**0.81694**	**9.99501**	2	**20**
41	9.17890	83	9.18391	84	0.81609	9.99499	2	19
42	9.17973	82	9.18475	85	0.81525	9.99497	2	18
43	9.18055	82	9.18560	84	0.81440	9.99495	1	17
44	9.18137	83	9.18644	84	0.81356	9.99494	2	16
45	**9.18220**	82	**9.18728**	84	**0.81272**	**9.99492**	2	**15**
46	9.18302	81	9.18812	84	0 81188	9.99490	2	14
47	9.18383	82	9.18896	83	0.81104	9.99488	2	13
48	9.18465	82	9.18979	84	0.81021	9.99486	2	12
49	9.18547	81	9.19063	83	0.80937	9.99484	2	11
50	**9.18628**	81	**9.19146**	83	**0.80854**	**9.99482**	2	**10**
51	9.18709	81	9.19229	83	0.80771	9.99480	2	9
52	9.18790	81	9.19312	83	0.80688	9.99478	2	8
53	9.18871	81	9.19395	83	0.80605	9.99476	2	7
54	9.18952	81	9.19478	83	0.80522	9.99474	2	6
55	**9.19033**	80	**9.19561**	82	**0.80439**	**9.99472**	2	**5**
56	9.19113	80	9.19643	82	0.80357	9.99470	2	4
57	9.19193	80	9.19725	82	0.80275	9.99468	2	3
58	9.19273	80	9.19807	82	0.80193	9.99466	2	2
59	9.19353	80	9.19889	82	0.80111	9.99464	2	1
60	**9.19433**	80	**9.19971**	82	**0.80029**	**9.99462**	2	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	86	85
1	1.4	1.4
2	2.9	2.8
3	4.3	4.3
4	5.7	5.7
5	7.2	7.1
6	8.6	8.5
7	10.0	9.9
8	11.5	11.3
9	12.9	12.8
10	14.3	14.2
20	28.7	28.3
30	43.0	42.5
40	57.3	56.7
50	71.7	70.8

	84	83
1	1.4	1.4
2	2.8	2.8
3	4.2	4.2
4	5.6	5.5
5	7.0	6.9
6	8.4	8.3
7	9.8	9.7
8	11.2	11.1
9	12.6	12.5
10	14.0	13.8
20	28.0	27.7
30	42.0	41.5
40	56.0	55.3
50	70.0	69.2

	82	81
1	1.4	1.4
2	2.7	2.7
3	4.1	4.1
4	5.5	5.4
5	6.8	6.8
6	8.2	8.1
7	9.6	9.5
8	10.9	10.8
9	12.3	12.2
10	13.7	13.5
20	27.3	27.0
30	41.0	40.5
40	54.7	54.0
50	68.3	67.5

	80
1	1.3
2	2.7
3	4.0
4	5.3
5	6.7
6	8.0
7	9.3
8	10.7
9	12.0
10	13.3
20	26.7
30	40.0
40	53.3
50	66.7

PP.

81°

9°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.19433**	80	**9.19971**	82	**0.80029**	**9.99462**	2	**60**
1	9.19513	79	9.20053	81	0.79947	9.99460	2	59
2	9.19592	80	9.20134	82	0.79866	9.99458	2	58
3	9.19672	79	9.20216	81	0.79784	9.99456	2	57
4	9.19751	79	9.20297	81	0.79703	9.99454	2	56
5	**9.19830**	79	**9.20378**	81	**0.79622**	**9.99452**	2	**55**
6	9.19909	79	9.20459	81	0.79541	9.99450	2	54
7	9.19988	79	9.20540	81	0.79460	9.99448	2	53
8	9.20067	78	9.20621	80	0.79379	9.99446	2	52
9	9.20145	78	9.20701	81	0.79299	9.99444	2	51
10	**9.20223**	79	**9.20782**	80	**0.79218**	**9.99442**	2	**50**
11	9.20302	78	9.20862	80	0.79138	9.99440	2	49
12	9.20380	78	9.20942	80	0.79058	9.99438	2	48
13	9.20458	77	9.21022	80	0.78978	9.99436	2	47
14	9.20535	78	9.21102	80	0.78898	9.99434	2	46
15	**9.20613**	78	**9.21182**	79	**0.78818**	**9.99432**	3	**45**
16	9.20691	77	9.21261	80	0.78739	9.99429	2	44
17	9.20768	77	9.21341	79	0.78659	9.99427	2	43
18	9.20845	77	9.21420	79	0.78580	9.99425	2	42
19	9.20922	77	9.21499	79	0.78501	9.99423	2	41
20	**9.20999**	77	**9.21578**	79	**0.78422**	**9.99421**	2	**40**
21	9.21076	77	9.21657	79	0.78343	9.99419	2	39
22	9.21153	76	9.21736	78	0.78264	9.99417	2	38
23	9.21229	77	9.21814	79	0.78186	9.99415	2	37
24	9.21306	76	9.21893	78	0.78107	9.99413	2	36
25	**9.21382**	76	**9.21971**	78	**0.78029**	**9.99411**	2	**35**
26	9.21458	76	9.22049	78	0.77951	9.99409	2	34
27	9.21534	76	9.22127	78	0.77873	9.99407	3	33
28	9.21610	75	9.22205	78	0.77795	9.99404	2	32
29	9.21685	76	9.22283	78	0.77717	9.99402	2	31
30	**9.21761**	75	**9.22361**	77	**0.77639**	**9.99400**	2	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	82	81
1	1.4	1.4
2	2.7	2.7
3	4.1	4.1
4	5.5	5.4
5	6.8	6.8
6	8.2	8.1
7	9.6	9.5
8	10.9	10.8
9	12.3	12.2
10	13.7	13.5
20	27.3	27.0
30	41.0	40.5
40	54.7	54.0
50	68.3	67.5

	80	79
1	1.3	1.3
2	2.7	2.6
3	4.0	4.0
4	5.3	5.3
5	6.7	6.6
6	8.0	7.9
7	9.3	9.2
8	10.7	10.5
9	12.0	11.9
10	13.3	13.2
20	26.7	26.3
30	40.0	39.5
40	53.3	52.7
50	66.7	65.8

	78	77
1	1.3	1.3
2	2.6	2.6
3	3.9	3.9
4	5.2	5.1
5	6.5	6.4
6	7.8	7.7
7	9.1	9.0
8	10.4	10.3
9	11.7	11.6
10	13.0	12.8
20	26.0	25.7
30	39.0	38.5
40	52.0	51.3
50	65.0	64.2

PP.

80°

9°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.21761**	75	**9.22361**	77	**0.77639**	**9.99400**	2	**30**
31	9.21836	76	9.22438	78	0.77562	9.99398	2	29
32	9.21912	75	9.22516	77	0.77484	9.99396	2	28
33	9.21987	75	9.22593	77	0.77407	9.99394	2	27
34	9.22062	75	9.22670	77	0.77330	9.99392	2	26
35	**9.22137**	74	**9.22747**	77	**0.77253**	**9.99390**	2	**25**
36	9.22211	75	9.22824	77	0.77176	9.99388	3	24
37	9.22286	75	9.22901	76	0.77099	9.99385	2	23
38	9.22361	74	9.22977	77	0.77023	9.99383	2	22
39	9.22435	74	9.23054	76	0.76946	9.99381	2	21
40	**9.22509**	74	**9.23130**	76	**0.76870**	**9.99379**	2	**20**
41	9.22583	74	9.23206	77	0.76794	9.99377	2	19
42	9.22657	74	9.23283	76	0.76717	9.99375	3	18
43	9.22731	74	9.23359	76	0.76641	9.99372	2	17
44	9.22805	73	9.23435	75	0.76565	9.99370	2	16
45	**9.22878**	74	**9.23510**	76	**0.76490**	**9.99368**	2	**15**
46	9.22952	73	9.23586	75	0.76414	9.99366	2	14
47	9.23025	73	9.23661	76	0.76339	9.99364	2	13
48	9.23098	73	9.23737	75	0.76263	9.99362	3	12
49	9.23171	73	9.23812	75	0.76188	9.99359	2	11
50	**9.23244**	73	**9.23887**	75	**0.76113**	**9.99357**	2	**10**
51	9.23317	73	9.23962	75	0.76038	9.99355	2	9
52	9.23390	72	9.24037	75	0.75963	9.99353	2	8
53	9.23462	73	9.24112	74	0.75888	9.99351	3	7
54	9.23535	72	9.24186	75	0.75814	9.99348	2	6
55	**9.23607**	72	**9.24261**	74	**0.75739**	**9.99346**	2	**5**
56	9.23679	73	9.24335	75	0.75665	9.99344	2	4
57	9.23752	71	9.24410	74	0.75590	9.99342	2	3
58	9.23823	72	9.24484	74	0.75516	9.99340	3	2
59	9.23895	72	9.24558	74	0.75442	9.99337	2	1
60	**9.23967**	72	**9.24632**	74	**0.75368**	**9.99335**	2	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	76	75
1	1.3	1.3
2	2.5	2.5
3	3.8	3.8
4	5.1	5.0
5	6.3	6.3
6	7.6	7.5
7	8.9	8.8
8	10.1	10.0
9	11.4	11.3
10	12.7	12.5
20	25.3	25.0
30	38.0	37.5
40	50.7	50.0
50	63.3	62.5

	74	73
1	1.2	1.2
2	2.5	2.4
3	3.7	3.7
4	4.9	4.9
5	6.2	6.1
6	7.4	7.3
7	8.6	8.5
8	9.9	9.7
9	11.1	11.0
10	12.3	12.2
20	24.7	24.3
30	37.0	36.5
40	49.3	48.7
50	61.7	60.8

	72	71
1	1.2	1.2
2	2.4	2.4
3	3.6	3.6
4	4.8	4.7
5	6.0	5.9
6	7.2	7.1
7	8.4	8.3
8	9.6	9.5
9	10.8	10.7
10	12.0	11.8
20	24.0	23.7
30	36.0	35.5
40	48.0	47.3
50	60.0	59.2

PP.

80°

10°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.23967**		**9.24632**		**0.75368**	**9.99335**		**60**
		72		74			2	
1	9.24039		9.24706		0.75294	9.99333		59
		71		73			2	
2	9.24110		9.24779		0.75221	9.99331		58
		71		74			3	
3	9.24181		9.24853		0.75147	9.99328		57
		72		73			2	
4	9.24253		9.24926		0.75074	9.99326		56
		71		74			2	
5	**9.24324**		**9.25000**		**0.75000**	**9.99324**		**55**
		71		73			2	
6	9.24395		9.25073		0.74927	9.99322		54
		71		73			3	
7	9.24466		9.25146		0.74854	9.99319		53
		70		73			2	
8	9.24536		9.25219		0.74781	9.99317		52
		71		73			2	
9	9.24607		9.25292		0.74708	9.99315		51
		70		73			2	
10	**9.24677**		**9.25365**		**0.74635**	**9.99313**		**50**
		71		72			3	
11	9.24748		9.25437		0.74563	9.99310		49
		70		73			2	
12	9.24818		9.25510		0.74490	9.99308		48
		70		72			2	
13	9.24888		9.25582		0.74418	9.99306		47
		70		73			2	
14	9.24958		9.25655		0.74345	9.99304		46
		70		72			3	
15	**9.25028**		**9.25727**		**0.74273**	**9.99301**		**45**
		70		72			2	
16	9.25098		9.25799		0.74201	9.99299		44
		70		72			2	
17	9.25168		9.25871		0.74129	9.99297		43
		69		72			3	
18	9.25237		9.25943		0.74057	9.99294		42
		70		72			2	
19	9.25307		9.26015		0.73985	9.99292		41
		69		71			2	
20	**9.25376**		**9.26086**		**0.73914**	**9.99290**		**40**
		69		72			2	
21	9.25445		9.26158		0.73842	9.99288		39
		69		71			3	
22	9.25514		9.26229		0.73771	9.99285		38
		69		72			2	
23	9.25583		9.26301		0.73699	9.99283		37
		69		71			2	
24	9.25652		9.26372		0.73628	9.99281		36
		69		71			3	
25	**9.25721**		**9.26443**		**0.73557**	**9.99278**		**35**
		69		71			2	
26	9.25790		9.26514		0.73486	9.99276		34
		68		71			2	
27	9.25858		9.26585		0.73415	9.99274		33
		69		70			3	
28	9.25927		9.26655		0.73345	9.99271		32
		68		71			2	
29	9.25995		9.26726		0.73274	9.99269		31
		68		71			2	
30	**9.26063**		**9.26797**		**0.73203**	**9.99267**		**30**
		68		70			3	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	74	73
1	1.2	1.2
2	2.5	2.4
3	3.7	3.7
4	4.9	4.9
5	6.2	6.1
6	7.4	7.3
7	8.6	8.5
8	9.9	9.7
9	11.1	11.0
10	12.3	12.2
20	24.7	24.3
30	37.0	36.5
40	49.3	48.7
50	61.7	60.8

	72	71
1	1.2	1.2
2	2.4	2.4
3	3.6	3.6
4	4.8	4.7
5	6.0	5.9
6	7.2	7.1
7	8.4	8.3
8	9.6	9.5
9	10.8	10.7
10	12.0	11.8
20	24.0	23.7
30	36.0	35.5
40	48.0	47.3
50	60.0	59.2

	70	69
1	1.2	1.2
2	2.3	2.3
3	3.5	3.5
4	4.7	4.6
5	5.8	5.8
6	7.0	6.9
7	8.2	8.1
8	9.3	9.2
9	10.5	10.4
10	11.7	11.5
20	23.3	23.0
30	35.0	34.5
40	46.7	46.0
50	58.3	57.5

PP.

79°

10°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑	PP. Seconds
30	**9.26063**	68	**9.26797**	70	**0.73203**	**9.99267**	3	**30**	
31	9.26131	68	9.26867	70	0.73133	9.99264	2	29	
32	9.26199	68	9.26937	71	0.73063	9.99262	2	28	
33	9.26267	68	9.27008	70	0.72992	9.99260	3	27	
34	9.26335	68	9.27078	70	0.72922	9.99257	2	26	
35	**9.26403**	67	**9.27148**	70	**0.72852**	**9.99255**	3	**25**	
36	9.26470	68	9.27218	70	0.72782	9.99252	2	24	
37	9.26538	67	9.27288	69	0.72712	9.99250	2	23	
38	9.26605	67	9.27357	70	0.72643	9.99248	3	22	
39	9.26672	67	9.27427	69	0.72573	9.99245	2	21	
40	**9.26739**	67	**9.27496**	70	**0.72504**	**9.99243**	2	**20**	
41	9.26806	67	9.27566	69	0.72434	9.99241	3	19	
42	9.26873	67	9.27635	69	0.72365	9.99238	2	18	
43	9.26940	67	9.27704	69	0.72296	9.99236	3	17	
44	9.27007	66	9.27773	69	0.72227	9.99233	2	16	
45	**9.27073**	67	**9.27842**	69	**0.72158**	**9.99231**	2	**15**	
46	9.27140	66	9.27911	69	0.72089	9.99229	3	14	
47	9.27206	67	9.27980	69	0.72020	9.99226	2	13	
48	9.27273	66	9.28049	68	0.71951	9.99224	3	12	
49	9.27339	66	9.28117	69	0.71883	9.99221	2	11	
50	**9.27405**	66	**9.28186**	68	**0.71814**	**9.99219**	2	**10**	
51	9.27471	66	9.28254	69	0.71746	9.99217	3	9	
52	9.27537	65	9.28323	68	0.71677	9.99214	2	8	
53	9.27602	66	9.28391	68	0.71609	9.99212	3	7	
54	9.27668	66	9.28459	68	0.71541	9.99209	2	6	
55	**9.27734**	65	**9.28527**	68	**0.71473**	**9.99207**	3	**5**	
56	9.27799	65	9.28595	67	0.71405	9.99204	2	4	
57	9.27864	66	9.28662	68	0.71338	9.99202	2	3	
58	9.27930	65	9.28730	68	0.71270	9.99200	3	2	
59	9.27995	65	9.28798	67	0.71202	9.99197	2	1	
60	**9.28060**	65	**9.28865**	68	**0.71135**	**9.99195**	3	**0**	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.	PP.

	70	69
1	1.2	1.2
2	2.3	2.3
3	3.5	3.5
4	4.7	4.6
5	5.8	5.8
6	7.0	6.9
7	8.2	8.1
8	9.3	9.2
9	10.5	10.4
10	11.7	11.5
20	23.3	23.0
30	35.0	34.5
40	46.7	46.0
50	58.3	57.5

	68	67
1	1.1	1.1
2	2.3	2.2
3	3.4	3.4
4	4.5	4.5
5	5.7	5.6
6	6.8	6.7
7	7.9	7.8
8	9.1	8.9
9	10.2	10.1
10	11.3	11.2
20	22.7	22.3
30	34.0	33.5
40	45.3	44.7
50	56.7	55.8

	66	65
1	1.1	1.1
2	2.2	2.2
3	3.3	3.3
4	4.4	4.3
5	5.5	5.4
6	6.6	6.5
7	7.7	7.6
8	8.8	8.7
9	9.9	9.8
10	11.0	10.8
20	22.0	21.7
30	33.0	32.5
40	44.0	43.3
50	55.0	54.2

79°

11°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.28060**		**9.28865**		**0.71135**	**9.99195**		**60**
		65		68			3	
1	9.28125		9.28933		0.71067	9.99192		59
		65		67			2	
2	9.28190		9.29000		0.71000	9.99190		58
		64		67			3	
3	9.28254		9.29067		0.70933	9.99187		57
		65		67			2	
4	9.28319		9.29134		0.70866	9.99185		56
		65		67			3	
5	**9.28384**		**9.29201**		**0.70799**	**9.99182**		**55**
		64		67			2	
6	9.28448		9.29268		0.70732	9.99180		54
		64		67			3	
7	9.28512		9.29335		0.70665	9.99177		53
		65		67			2	
8	9.28577		9.29402		0.70598	9.99175		52
		64		66			3	
9	9.28641		9.29468		0.70532	9.99172		51
		64		67			2	
10	**9.28705**		**9.29535**		**0.70465**	**9.99170**		**50**
		64		66			3	
11	9.28769		9.29601		0.70399	9.99167		49
		64		67			2	
12	9.28833		9.29668		0.70332	9.99165		48
		63		66			3	
13	9.28896		9.29734		0.70266	9.99162		47
		64		66			2	
14	9.28960		9.29800		0.70200	9.99160		46
		64		66			3	
15	**9.29024**		**9.29866**		**0.70134**	**9.99157**		**45**
		63		66			2	
16	9.29087		9.29932		0.70068	9.99155		44
		63		66			3	
17	9.29150		9.29998		0.70002	9.99152		43
		64		66			2	
18	9.29214		9.30064		0.69936	9.99150		42
		63		66			3	
19	9.29277		9.30130		0.69870	9.99147		41
		63		65			2	
20	**9.29340**		**9.30195**		**0.69805**	**9.99145**		**40**
		63		66			[illegible]	
21	9.29403		9.30261		0.69739	9.99142		39
		63		65			2	
22	9.29466		9.30326		0.69674	9.99140		38
		63		65			3	
23	9.29529		9.30391		0.69609	9.99137		37
		62		66			2	
24	9.29591		9.30457		0.69543	9.99135		36
		63		65			3	
25	**9.29654**		**9.30522**		**0.69478**	**9.99132**		**35**
		62		65			2	
26	9.29716		9.30587		0.69413	9.99130		34
		63		65			3	
27	9.29779		9.30652		0.69348	9.99127		33
		62		65			3	
28	9.29841		9.30717		0.69283	9.99124		32
		62		65			2	
29	9.29903		9.30782		0.69218	9.99122		31
		63		64			3	
30	**9.29966**		**9.30846**		**0.69154**	**9.99119**		**30**
		62		65			2	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	68	67
1	1.1	1.1
2	2.3	2.2
3	3.4	3.4
4	4.5	4 5
5	5.7	5.6
6	6.8	6.7
7	7.9	7.8
8	9 1	8.9
9	10.2	10.1
10	11.3	11.2
20	22.7	22.3
30	34.0	33.5
40	45.3	44.7
50	56.7	55.8

	66	65
1	1.1	1.1
2	2.2	2.2
3	3.3	3.3
4	4.4	4.3
5	5.5	5.4
6	6.6	6.5
7	7.7	7.6
8	8.8	8.7
9	9.9	9.8
10	11.0	10.8
20	22.0	21.7
30	33.0	32.5
40	44.0	43.3
50	55.0	54.2

	64	63
1	1.1	1.1
2	2.1	2.1
3	3.2	3.2
4	4.3	4.2
5	5.3	5.3
6	6.4	6.3
7	7.5	7.4
8	8.5	8.4
9	9.6	9.5
10	10.7	10.5
20	21.3	21.0
30	32.0	31.5
40	42.7	42.0
50	53.3	52.5

PP.

78°

11°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.29966**	62	**9.30846**	65	**0.69154**	**9.99119**	2	**30**
31	9.30028	62	9.30911	64	0.69089	9.99117	3	29
32	9.30090	61	9.30975	65	0.69025	9.99114	2	28
33	9.30151	62	9.31040	64	0.68960	9.99112	3	27
34	9.30213	62	9.31104	64	0.68896	9.99109	3	26
35	**9.30275**	61	**9.31168**	65	**0.68832**	**9.99106**	2	**25**
36	9.30336	62	9.31233	64	0.68767	9.99104	3	24
37	9.30398	61	9.31297	64	0.68703	9.99101	2	23
38	9.30459	62	9.31361	64	0.68639	9.99099	3	22
39	9.30521	61	9.31425	64	0.68575	9.99096	3	21
40	**9.30582**	61	**9.31489**	63	**0.68511**	**9.99093**	2	**20**
41	9.30643	61	9.31552	64	0.68448	9.99091	3	19
42	9.30704	61	9.31616	63	0.68384	9.99088	2	18
43	9.30765	61	9.31679	64	0.68321	9.99086	3	17
44	9.30826	61	9.31743	63	0.68257	9.99083	3	16
45	**9.30887**	60	**9.31806**	64	**0.68194**	**9.99080**	2	**15**
46	9.30947	61	9.31870	63	0.68130	9.99078	3	14
47	9.31008	60	9.31933	63	0.68067	9.99075	3	13
48	9.31068	61	9.31996	63	0.68004	9.99072	2	12
49	9.31129	60	9.32059	63	0.67941	9.99070	3	11
50	**9.31189**	61	**9.32122**	63	**0.67878**	**9.99067**	3	**10**
51	9.31250	60	9.32185	63	0.67815	9.99064	2	9
52	9.31310	60	9.32248	63	0.67752	9.99062	3	8
53	9.31370	60	9.32311	62	0.67689	9.99059	3	7
54	9.31430	60	9.32373	63	0.67627	9.99056	2	6
55	**9.31490**	59	**9.32436**	62	**0.67564**	**9.99054**	3	**5**
56	9.31549	60	9.32498	63	0.67502	9.99051	3	4
57	9.31609	60	9.32561	62	0.67439	9.99048	2	3
58	9.31669	59	9.32623	62	0.67377	9.99046	3	2
59	9.31728	60	9.32685	62	0.67315	9.99043	3	1
60	**9.31788**	59	**9.32747**	63	**0.67253**	**9.99040**	2	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	64	63
1	1.1	1.1
2	2.1	2.1
3	3.2	3.2
4	4.3	4.2
5	5.3	5.3
6	6.4	6.3
7	7.5	7.4
8	8.5	8.4
9	9.6	9.5
10	10.7	10.5
20	21.3	21.0
30	32.0	31.5
40	42.7	42.0
50	53.3	52.5

	62	61
1	1.0	1.0
2	2.1	2.0
3	3.1	3.1
4	4.1	4.1
5	5.2	5.1
6	6.2	6.1
7	7.2	7.1
8	8.3	8.1
9	9.3	9.2
10	10.3	10.2
20	20.7	20.3
30	31.0	30.5
40	41.3	40.7
50	51.7	50.8

	60	59
1	1.0	1.0
2	2.0	2.0
3	3.0	3.0
4	4.0	3.9
5	5.0	4.9
6	6.0	5.9
7	7.0	6.9
8	8.0	7.9
9	9.0	8.9
10	10.0	9.8
20	20.0	19.7
30	30.0	29.5
40	40.0	39.3
50	50.0	49.2

PP.

78°

12°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.31788**	59	**9.32747**	63	**0.67253**	**9.99040**	2	**60**
1	9.31847	60	9.32810	62	0.67190	9.99038	3	59
2	9.31907	59	9.32872	61	0.67128	9.99035	3	58
3	9.31966	59	9.32933	62	0.67067	9.99032	2	57
4	9.32025	59	9.32995	62	0.67005	9.99030	3	56
5	**9.32084**	59	**9.33057**	62	**0.66943**	**9.99027**	3	**55**
6	9.32143	59	9.33119	61	0.66881	9.99024	2	54
7	9.32202	59	9.33180	62	0.66820	9.99022	3	53
8	9.32261	58	9.33242	61	0.66758	9.99019	3	52
9	9.32319	59	9.33303	62	0.66697	9.99016	3	51
10	**9.32378**	59	**9.33365**	61	**0.66635**	**9.99013**	2	**50**
11	9.32437	58	9.33426	61	0.66574	9.99011	3	49
12	9.32495	58	9.33487	61	0.66513	9.99008	3	48
13	9.32553	59	9.33548	61	0.66452	9.99005	3	47
14	9.32612	58	9.33609	61	0.66391	9.99002	2	46
15	**9.32670**	58	**9.33670**	61	**0.66330**	**9.99000**	3	**45**
16	9.32728	58	9.33731	61	0.66269	9.98997	3	44
17	9.32786	58	9.33792	61	0.66208	9.98994	3	43
18	9.32844	58	9.33853	60	0.66147	9.98991	2	42
19	9.32902	58	9.33913	61	0.66087	9.98989	3	41
20	**9.32960**	58	**9.33974**	60	**0.66026**	**9.98986**	3	**40**
21	9.33018	57	9.34034	61	0.65966	9.98983	3	39
22	9.33075	58	9.34095	60	0.65905	9.98980	2	38
23	9.33133	57	9.34155	60	0.65845	9.98978	3	37
24	9.33190	58	9.34215	61	0.65785	9.98975	3	36
25	**9.33248**	57	**9.34276**	60	**0.65724**	**9.98972**	3	**35**
26	9.33305	57	9.34336	60	0.65664	9.98969	2	34
27	9.33362	58	9.34396	60	0.65604	9.98967	3	33
28	9.33420	57	9.34456	60	0.65544	9.98964	3	32
29	9.33477	57	9.34516	60	0.65484	9.98961	3	31
30	**9.33534**	57	**9.34576**	59	**0.65424**	**9.98958**	3	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	63	62
1	1.1	1.0
2	2.1	2.1
3	3.2	3.1
4	4.2	4.1
5	5.3	5.2
6	6.3	6.2
7	7.4	7.2
8	8.4	8.3
9	9.5	9.3
10	10.5	10.3
20	21.0	20.7
30	31.5	31.0
40	42.0	41.3
50	52.5	51.7

	61	60
1	1.0	1.0
2	2.0	2.0
3	3.1	3.0
4	4.1	4.0
5	5.1	5.0
6	6.1	6.0
7	7.1	7.0
8	8.1	8.0
9	9.2	9.0
10	10.2	10.0
20	20.3	20.0
30	30.5	30.0
40	40.7	40.0
50	50.8	50.0

	59	58
1	1.0	1.0
2	2.0	1.9
3	3.0	2.9
4	3.9	3.9
5	4.9	4.8
6	5.9	5.8
7	6.9	6.8
8	7.9	7.7
9	8.9	8.7
10	9.8	9.7
20	19.7	19.3
30	29.5	29.0
40	39.3	38.7
50	49.2	48.3

PP.

77°

12°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.33534**	57	**9.34576**	59	**0.65424**	**9.98958**	3	**30**
31	9.33591	56	9.34635	60	0.65365	9.98955	2	29
32	9.33647	57	9.34695	60	0.65305	9.98953	3	28
33	9.33704	57	9.34755	59	0.65245	9.98950	3	27
34	9.33761	57	9.34814	60	0.65186	9.98947	3	26
35	**9.33818**	56	**9.34874**	59	**0.65126**	**9.98944**	3	**25**
36	9.33874	57	9.34933	59	0.65067	9.98941	3	24
37	9.33931	56	9.34992	59	0.65008	9.98938	2	23
38	9.33987	56	9.35051	60	0.64949	9.98936	3	22
39	9.34043	57	9.35111	59	0.64889	9.98933	3	21
40	**9.34100**	56	**9.35170**	59	**0.64830**	**9.98930**	3	**20**
41	9.34156	56	9.35229	59	0.64771	9.98927	3	19
42	9.34212	56	9.35288	59	0.64712	9.98924	3	18
43	9.34268	56	9.35347	58	0.64653	9.98921	2	17
44	9.34324	56	9.35405	59	0.64595	9.98919	3	16
45	**9.34380**	56	**9.35464**	59	**0.64536**	**9.98916**	3	**15**
46	9.34436	55	9.35523	58	0.64477	9.98913	3	14
47	9.34491	56	9.35581	59	0.64419	9.98910	3	13
48	9.34547	55	9.35640	58	0.64360	9.98907	3	12
49	9.34602	56	9.35698	59	0.64302	9.98904	3	11
50	**9.34658**	55	**9.35757**	58	**0.64243**	**9.98901**	3	**10**
51	9.34713	56	9.35815	58	0.64185	9.98898	2	9
52	9.34769	55	9.35873	58	0.64127	9.98896	3	8
53	9.34824	55	9.35931	58	0.64069	9.98893	3	7
54	9.34879	55	9.35989	58	0.64011	9.98890	3	6
55	**9.34934**	55	**9.36047**	58	**0.63953**	**9.98887**	3	**5**
56	9.34989	55	9.36105	58	0.63895	9.98884	3	4
57	9.35044	55	9.36163	58	0.63837	9.98881	3	3
58	9.35099	55	9.36221	58	0.63779	9.98878	3	2
59	9.35154	55	9.36279	57	0.63721	9.98875	3	1
60	**9.35209**	54	**9.36336**	58	**0.63664**	**9.98872**	3	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	59	58
1	1.0	1.0
2	2.0	1.9
3	3.0	2.9
4	3.9	3.9
5	4.9	4.8
6	5.9	5.8
7	6.9	6.8
8	7.9	7.7
9	8.9	8.7
10	9.8	9.7
20	19.7	19.3
30	29.5	29.0
40	39.3	38.7
50	49.2	48.3

	57	56
1	1.0	0.9
2	1.9	1.9
3	2.9	2.8
4	3.8	3.7
5	4.8	4.7
6	5.7	5.6
7	6.7	6.5
8	7.6	7.5
9	8.6	8.4
10	9.5	9.3
20	19.0	18.7
30	28.5	28.0
40	38.0	37.3
50	47.5	46.7

	55	54
1	0.9	0.9
2	1.8	1.8
3	2.8	2.7
4	3.7	3.6
5	4.6	4.5
6	5.5	5.4
7	6.4	6.3
8	7.3	7.2
9	8.3	8.1
10	9.2	9.0
20	18.3	18.0
30	27.5	27.0
40	36.7	36.0
50	45.8	45.0

PP.

77°

13°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.35209**		**9.36336**		**0.63664**	**9.98872**		**60**
		54		58			3	
1	9.35263		9.36394		0.63606	9.98869		59
		55		58			2	
2	9.35318		9.36452		0.63548	9.98867		58
		55		57			3	
3	9.35373		9.36509		0.63491	9.98864		57
		54		57			3	
4	9.35427		9.36566		0.63434	9.98861		56
		54		58			3	
5	**9.35481**		**9.36624**		**0.63376**	**9.98858**		**55**
		55		57			3	
6	9.35536		9.36681		0.63319	9.98855		54
		54		57			3	
7	9.35590		9.36738		0.63262	9.98852		53
		54		57			3	
8	9.35644		9.36795		0.63205	9.98849		52
		54		57			3	
9	9.35698		9.36852		0.63148	9.98846		51
		54		57			3	
10	**9.35752**		**9.36909**		**0.63091**	**9.98843**		**50**
		54		57			3	
11	9.35806		9.36966		0.63034	9.98840		49
		54		57			3	
12	9.35860		9.37023		0.62977	9.98837		48
		54		57			3	
13	9.35914		9.37080		0.62920	9.98834		47
		54		57			3	
14	9.35968		9.37137		0.62863	9.98831		46
		54		56			3	
15	**9.36022**		**9.37193**		**0.62807**	**9.98828**		**45**
		53		57			3	
16	9.36075		9.37250		0.62750	9.98825		44
		54		56			3	
17	9.36129		9.37306		0.62694	9.98822		43
		53		57			3	
18	9.36182		9.37363		0.62637	9.98819		42
		54		56			3	
19	9.36236		9.37419		0.62581	9.98816		41
		53		57			3	
20	**9.36289**		**9.37476**		**0.62524**	**9.98813**		**40**
		53		56			3	
21	9.36342		9.37532		0.62468	9.98810		39
		53		56			3	
22	9.36395		9.37588		0.62412	9.98807		38
		54		56			3	
23	9.36449		9.37644		0.62356	9.98804		37
		53		56			3	
24	9.36502		9.37700		0.62300	9.98801		36
		53		56			3	
25	**9.36555**		**9.37756**		**0.62244**	**9.98798**		**35**
		53		56			3	
26	9.36608		9.37812		0.62188	9.98795		34
		52		56			3	
27	9.36660		9.37868		0.62132	9.98792		33
		53		56			3	
28	9.36713		9.37924		0.62076	9.98789		32
		53		56			3	
29	9.36766		9.37980		0.62020	9.98786		31
		53		55			3	
30	**9.36819**		**9.38035**		**0.61965**	**9.98783**		**30**
		52		56			3	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	58	57
1	1.0	1.0
2	1.9	1.9
3	2.9	2.9
4	3.9	3.8
5	4.8	4.8
6	5.8	5.7
7	6.8	6.7
8	7.7	7.6
9	8.7	8.6
10	9.7	9.5
20	19.3	19.0
30	29.0	28.5
40	38.7	38.0
50	48.3	47.5

	56	55
1	0.9	0.9
2	1.9	1.8
3	2.8	2.8
4	3.7	3.7
5	4.7	4.6
6	5.6	5.5
7	6.5	6.4
8	7.5	7.3
9	8.4	8.3
10	9.3	9.2
20	18.7	18.3
30	28.0	27.5
40	37.3	36.7
50	46.7	45.8

	54	53
1	0.9	0.9
2	1.8	1.8
3	2.7	2.7
4	3.6	3.5
5	4.5	4.4
6	5.4	5.3
7	6.3	6.2
8	7.2	7.1
9	8.1	8.0
10	9.0	8.8
20	18.0	17.7
30	27.0	26.5
40	36.0	35.3
50	45.0	44.2

PP.

76°

13°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.36819**		**9.38035**		**0.61965**	**9.98783**		**30**
		52		56			3	
31	9.36871		9.38091		0.61909	9.98780		29
		53		56			3	
32	9.36924		9.38147		0.61853	9.98777		28
		52		55			3	
33	9.36976		9.38202		0.61798	9.98774		27
		52		55			3	
34	9.37028		9.38257		0.61743	9.98771		26
		53		56			3	
35	**9.37081**		**9.38313**		**0.61687**	**9.98768**		**25**
		52		55			3	
36	9.37133		9.38368		0.61632	9.98765		24
		52		55			3	
37	9.37185		9.38423		0.61577	9.98762		23
		52		56			3	
38	9.37237		9.38479		0.61521	9.98759		22
		52		55			3	
39	9.37289		9.38534		0.61466	9.98756		21
		52		55			3	
40	**9.37341**		**9.38589**		**0.61411**	**9.98753**		**20**
		52		55			3	
41	9.37393		9.38644		0.61356	9.98750		19
		52		55			4	
42	9.37445		9.38699		0.61301	9.98746		18
		52		55			3	
43	9.37497		9.38754		0.61246	9.98743		17
		52		54			3	
44	9.37549		9.38808		0.61192	9.98740		16
		51		55			3	
45	**9.37600**		**9.38863**		**0.61137**	**9.98737**		**15**
		52		55			3	
46	9.37652		9.38918		0.61082	9.98734		14
		51		54			3	
47	9.37703		9.38972		0.61028	9.98731		13
		52		55			3	
48	9.37755		9.39027		0.60973	9.98728		12
		51		55			3	
49	9.37806		9.39082		0.60918	9.98725		11
		52		54			3	
50	**9.37858**		**9.39136**		**0.60864**	**9.98722**		**10**
		51		54			3	
51	9.37909		9.39190		0.60810	9.98719		9
		51		55			4	
52	9.37960		9.39245		0.60755	9.98715		8
		51		54			3	
53	9.38011		9.39299		0.60701	9.98712		7
		51		54			3	
54	9.38062		9.39353		0.60647	9.98709		6
		51		54			3	
55	**9.38113**		**9.39407**		**0.60593**	**9.98706**		**5**
		51		54			3	
56	9.38164		9.39461		0.60539	9.98703		4
		51		54			3	
57	9.38215		9.39515		0.60485	9.98700		3
		51		54			3	
58	9.38266		9.39569		0.60431	9.98697		2
		51		54			3	
59	9.38317		9.39623		0.60377	9.98694		1
		51		54			4	
60	**9.38368**		**9.39677**		**0.60323**	**9.98690**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	56	55
1	0.9	0.9
2	1.9	1.8
3	2.8	2.8
4	3.7	3.7
5	4.7	4.6
6	5.6	5.5
7	6.5	6.4
8	7.5	7.3
9	8.4	8.3
10	9.3	9.2
20	18.7	18.3
30	28.0	27.5
40	37.3	36.7
50	46.7	45.8

	54	53
1	0.9	0.9
2	1.8	1.8
3	2.7	2.7
4	3.6	3.5
5	4.5	4.4
6	5.4	5.3
7	6.3	6.2
8	7.2	7.1
9	8.1	8.0
10	9.0	8.8
20	18.0	17.7
30	27.0	26.5
40	36.0	35.3
50	45.0	44.2

	52	51
1	0.9	0.9
2	1.7	1.7
3	2.6	2.6
4	3.5	3.4
5	4.3	4.3
6	5.2	5.1
7	6.1	6.0
8	6.9	6.8
9	7.8	7.7
10	8.7	8.5
20	17.3	17.0
30	26.0	25.5
40	34.7	34.0
50	43.3	42.5

PP.

76°

14°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	9.38368	50	9.39677	54	0.60323	9.98690	3	60
1	9.38418	51	9.39731	54	0.60269	9.98687	3	59
2	9.38469	50	9.39785	53	0.60215	9.98684	3	58
3	9.38519	51	9.39838	54	0.60162	9.98681	3	57
4	9.38570	50	9.39892	53	0.60108	9.98678	3	56
5	9.38620	50	9.39945	54	0.60055	9.98675	4	55
6	9.38670	51	9.39999	53	0.60001	9.98671	3	54
7	9.38721	50	9.40052	54	0.59948	9.98668	3	53
8	9.38771	50	9.40106	53	0.59894	9.98665	3	52
9	9.38821	50	9.40159	53	0.59841	9.98662	3	51
10	9.38871	50	9.40212	54	0.59788	9.98659	3	50
11	9.38921	50	9.40266	53	0.59734	9.98656	4	49
12	9.38971	50	9.40319	53	0.59681	9.98652	3	48
13	9.39021	50	9.40372	53	0.59628	9.98649	3	47
14	9.39071	50	9.40425	53	0.59575	9.98646	3	46
15	9.39121	49	9.40478	53	0.59522	9.98643	3	45
16	9.39170	50	9.40531	53	0.59469	9.98640	4	44
17	9.39220	50	9.40584	52	0.59416	9.98636	3	43
18	9.39270	49	9.40636	53	0.59364	9.98633	3	42
19	9.39319	50	9.40689	53	0.59311	9.98630	3	41
20	9.39369	49	9.40742	53	0.59258	9.98627	4	40
21	9.39418	49	9.40795	52	0.59205	9.98623	3	39
22	9.39467	50	9.40847	53	0.59153	9.98620	3	38
23	9.39517	49	9.40900	52	0.59100	9.98617	3	37
24	9.39566	49	9.40952	53	0.59048	9.98614	4	36
25	9.39615	49	9.41005	52	0.58995	9.98610	3	35
26	9.39664	49	9.41057	52	0.58943	9.98607	3	34
27	9.39713	49	9.41109	52	0.58891	9.98604	3	33
28	9.39762	49	9.41161	53	0.58839	9.98601	4	32
29	9.39811	49	9.41214	52	0.58786	9.98597	3	31
30	9.39860	49	9.41266	52	0.58734	9.98594	3	30
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	54	53
1	0.9	0.9
2	1.8	1.8
3	2.7	2.7
4	3.6	3.5
5	4.5	4.4
6	5.4	5.3
7	6.3	6.2
8	7.2	7.1
9	8.1	8.0
10	9.0	8.8
20	18.0	17.7
30	27.0	26.5
40	36.0	35.3
50	45.0	44.2

	52	51
1	0.9	0.9
2	1.7	1.7
3	2.6	2.6
4	3.5	3.4
5	4.3	4.3
6	5.2	5.1
7	6.1	6.0
8	6.9	6.8
9	7.8	7.7
10	8.7	8.5
20	17.3	17.0
30	26.0	25.5
40	34.7	34.0
50	43.3	42.5

	50	49
1	0.8	0.8
2	1.7	1.6
3	2.5	2.5
4	3.3	3.3
5	4.2	4.1
6	5.0	4.9
7	5.8	5.7
8	6.7	6.5
9	7.5	7.4
10	8.3	8.2
20	16.7	16.3
30	25.0	24.5
40	33.3	32.7
50	41.7	40.8

PP.

75°

14°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.39860**	49	**9.41266**	52	**0.58734**	**9.98594**	3	**30**
31	9.39909	49	9.41318	52	0.58682	9.98591	3	29
32	9.39958	48	9.41370	52	0.58630	9.98588	4	28
33	9.40006	49	9.41422	52	0.58578	9.98584	3	27
34	9.40055	48	9.41474	52	0.58526	9.98581	3	26
35	**9.40103**	49	**9.41526**	52	**0.58474**	**9.98578**	4	**25**
36	9.40152	48	9.41578	51	0.58422	9.98574	3	24
37	9.40200	49	9.41629	52	0.58371	9.98571	3	23
38	9.40249	48	9.41681	52	0.58319	9.98568	3	22
39	9.40297	49	9.41733	51	0.58267	9.98565	4	21
40	**9.40346**	48	**9.41784**	52	**0.58216**	**9.98561**	3	**20**
41	9.40394	48	9.41836	51	0.58164	9.98558	3	19
42	9.40442	48	9.41887	52	0.58113	9.98555	4	18
43	9.40490	48	9.41939	51	0.58061	9.98551	3	17
44	9.40538	48	9.41990	51	0.58010	9.98548	3	16
45	**9.40586**	48	**9.42041**	52	**0.57959**	**9.98545**	4	**15**
46	9.40634	48	9.42093	51	0.57907	9.98541	3	14
47	9.40682	48	9.42144	51	0.57856	9.98538	3	13
48	9.40730	48	9.42195	51	0.57805	9.98535	4	12
49	9.40778	47	9.42246	51	0.57754	9.98531	3	11
50	**9.40825**	48	**9.42297**	51	**0.57703**	**9.98528**	3	**10**
51	9.40873	48	9.42348	51	0.57652	9.98525	4	9
52	9.40921	47	9.42399	51	0.57601	9.98521	3	8
53	9.40968	48	9.42450	51	0.57550	9.98518	3	7
54	9.41016	47	9.42501	51	0.57499	9.98515	4	6
55	**9.41063**	48	**9.42552**	51	**0.57448**	**9.98511**	3	**5**
56	9.41111	47	9.42603	50	0.57397	9.98508	3	4
57	9.41158	47	9.42653	51	0.57347	9.98505	4	3
58	9.41205	47	9.42704	51	0.57296	9.98501	3	2
59	9.41252	48	9.42755	50	0.57245	9.98498	4	1
60	**9.41300**		**9.42805**		**0.57195**	**9.98494**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	52	51
1	0.9	0.9
2	1.7	1.7
3	2.6	2.6
4	3.5	3.4
5	4.3	4.3
6	5.2	5.1
7	6.1	6.0
8	6.9	6.8
9	7.8	7.7
10	8.7	8.5
20	17.3	17.0
30	26.0	25.5
40	34.7	34.0
50	43.3	42.5

	50	49
1	0.8	0.8
2	1.7	1.6
3	2.5	2.5
4	3.3	3.3
5	4.2	4.1
6	5.0	4.9
7	5.8	5.7
8	6.7	6.5
9	7.5	7.4
10	8.3	8.2
20	16.7	16.3
30	25.0	24.5
40	33.3	32.7
50	41.7	40.8

	48	47
1	0.8	0.8
2	1.6	1.6
3	2.4	2.4
4	3.2	3.1
5	4.0	3.9
6	4.8	4.7
7	5.6	5.5
8	6.4	6.3
9	7.2	7.1
10	8.0	7.8
20	16.0	15.7
30	24.0	23.5
40	32.0	31.3
50	40.0	39.2

PP.

75°

15°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.41300**	47	**9.42805**	51	**0.57195**	**9.98494**	3	60
1	9.41347	47	9.42856	50	0.57144	9.98491	3	59
2	9.41394	47	9.42906	51	0.57094	9.98488	4	58
3	9.41441	47	9.42957	50	0.57043	9.98484	3	57
4	9.41488	47	9.43007	50	0.56993	9.98481	4	56
5	**9.41535**	47	**9.43057**	51	**0.56943**	**9.98477**	3	55
6	9.41582	46	9.43108	50	0.56892	9.98474	3	54
7	9.41628	47	9.43158	50	0.56842	9.98471	4	53
8	9.41675	47	9.43208	50	0.56792	9.98467	3	52
9	9.41722	46	9.43258	50	0.56742	9.98464	4	51
10	**9.41768**	47	**9.43308**	50	**0.56692**	**9.98460**	3	50
11	9.41815	46	9.43358	50	0.56642	9.98457	4	49
12	9.41861	47	9.43408	50	0.56592	9.98453	3	48
13	9.41908	46	9.43458	50	0.56542	9.98450	3	47
14	9.41954	47	9.43508	50	0.56492	9.98447	4	46
15	**9.42001**	46	**9.43558**	49	**0.56442**	**9.98443**	3	45
16	9.42047	46	9.43607	50	0.56393	9.98440	4	44
17	9.42093	47	9.43657	50	0.56343	9.98436	3	43
18	9.42140	46	9.43707	49	0.56293	9.98433	4	42
19	9.42186	46	9.43756	50	0.56244	9.98429	3	41
20	**9.42232**	46	**9.43806**	49	**0.56194**	**9.98426**	4	40
21	9.42278	46	9.43855	50	0.56145	9.98422	3	39
22	9.42324	46	9.43905	49	0.56095	9.98419	4	38
23	9.42370	46	9.43954	50	0.56046	9.98415	3	37
24	9.42416	45	9.44004	49	0.55996	9.98412	3	36
25	**9.42461**	46	**9.44053**	49	**0.55947**	**9.98409**	4	35
26	9.42507	46	9.44102	49	0.55898	9.98405	3	34
27	9.42553	46	9.44151	50	0.55849	9.98402	4	33
28	9.42599	45	9.44201	49	0.55799	9.98398	3	32
29	9.42644	46	9.44250	49	0.55750	9.98395	4	31
30	**9.42690**	45	**9.44299**	49	**0.55701**	**9.98391**	3	30
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	51	50
1	0.9	0.8
2	1.7	1.7
3	2.6	2.5
4	3.4	3.3
5	4.3	4.2
6	5.1	5.0
7	6.0	5.8
8	6.8	6.7
9	7.7	7.5
10	8.5	8.3
20	17.0	16.7
30	25.5	25.0
40	34.0	33.3
50	42.5	41.7

	49	48
1	0.8	0.8
2	1.6	1.6
3	2.5	2.4
4	3.3	3.2
5	4.1	4.0
6	4.9	4.8
7	5.7	5.6
8	6.5	6.4
9	7.4	7.2
10	8.2	8.0
20	16.3	16.0
30	24.5	24.0
40	32.7	32.0
50	40.8	40.0

	47	46
1	0.8	0.8
2	1.6	1.5
3	2.4	2.3
4	3.1	3.1
5	3.9	3.8
6	4.7	4.6
7	5.5	5.4
8	6.3	6.1
9	7.1	6.9
10	7.8	7.7
20	15.7	15.3
30	23.5	23.0
40	31.3	30.7
50	39.2	38.3

PP.

74°

15°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑	PP. Seconds
30	**9.42690**		**9.44299**		**0.55701**	**9.98391**		**30**	
		45		49			3		
31	9.42735		9.44348		0.55652	9.98388		29	
		46		49			4		
32	9.42781		9.44397		0.55603	9.98384		28	
		45		49			3		
33	9.42826		9.44446		0.55554	9.98381		27	
		46		49			4		
34	9.42872		9.44495		0.55505	9.98377		26	
		45		49			4		
35	**9.42917**		**9.44544**		**0.55456**	**9.98373**		**25**	
		45		48			3		
36	9.42962		9.44592		0.55408	9.98370		24	
		46		49			4		
37	9.43008		9.44641		0.55359	9.98366		23	
		45		49			3		
38	9.43053		9.44690		0.55310	9.98363		22	
		45		48			4		
39	9.43098		9.44738		0.55262	9.98359		21	
		45		49			3		
40	**9.43143**		**9.44787**		**0.55213**	**9.98356**		**20**	
		45		49			4		
41	9.43188		9.44836		0.55164	9.98352		19	
		45		48			3		
42	9.43233		9.44884		0.55116	9.98349		18	
		45		49			4		
43	9.43278		9.44933		0.55067	9.98345		17	
		45		48			3		
44	9.43323		9.44981		0.55019	9.98342		16	
		44		48			4		
45	**9.43367**		**9.45029**		**0.54971**	**9.98338**		**15**	
		45		49			4		
46	9.43412		9.45078		0.54922	9.98334		14	
		45		48			3		
47	9.43457		9.45126		0.54874	9.98331		13	
		45		48			4		
48	9.43502		9.45174		0.54826	9.98327		12	
		44		48			3		
49	9.43546		9.45222		0.54778	9.98324		11	
		45		49			4		
50	**9.43591**		**9.45271**		**0.54729**	**9.98320**		**10**	
		44		48			3		
51	9.43635		9.45319		0.54681	9.98317		9	
		45		48			4		
52	9.43680		9.45367		0.54633	9.98313		8	
		44		48			4		
53	9.43724		9.45415		0.54585	9.98309		7	
		45		48			3		
54	9.43769		9.45463		0.54537	9.98306		6	
		44		48			4		
55	**9.43813**		**9.45511**		**0.54489**	**9.98302**		**5**	
		44		48			3		
56	9.43857		9.45559		0.54441	9.98299		4	
		44		47			4		
57	9.43901		9.45606		0.54394	9.98295		3	
		45		48			4		
58	9.43946		9.45654		0.54346	9.98291		2	
		44		48			3		
59	9.43990		9.45702		0.54298	9.98288		1	
		44		48			4		
60	**9.44034**		**9.45750**		**0.54250**	**9.98284**		**0**	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.	PP.

	49	48
1	0.8	0.8
2	1.6	1.6
3	2.5	2.4
4	3.3	3.2
5	4.1	4.0
6	4.9	4.8
7	5.7	5.6
8	6.5	6.4
9	7.4	7.2
10	8.2	8.0
20	16.3	16.0
30	24.5	24.0
40	32.7	32.0
50	40.8	40.0

	47	46
1	0.8	0.8
2	1.6	1.5
3	2.4	2.3
4	3.1	3.1
5	3.9	3.8
6	4.7	4.6
7	5.5	5.4
8	6.3	6.1
9	7.1	6.9
10	7.8	7.7
20	15.7	15.3
30	23.5	23.0
40	31.3	30.7
50	39.2	38.3

	45	44
1	0.8	0.7
2	1.5	1.5
3	2.3	2.2
4	3.0	2.9
5	3.8	3.7
6	4.5	4.4
7	5.3	5.1
8	6.0	5.9
9	6.8	6.6
10	7.5	7.3
20	15.0	14.7
30	22.5	22.0
40	30.0	29.3
50	37.5	36.7

74°

16°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.44034**	44	**9.45750**	47	**0.54250**	**9.98284**	3	**60**
1	9.44078	44	9.45797	48	0.54203	9.98281	4	59
2	9.44122	44	9.45845	47	0.54155	9.98277	4	58
3	9.44166	44	9.45892	48	0.54108	9.98273	3	57
4	9.44210	43	9.45940	47	0.54060	9.98270	4	56
5	**9.44253**	44	**9.45987**	48	**0.54013**	**9.98266**	4	**55**
6	9.44297	44	9.46035	47	0.53965	9.98262	3	54
7	9.44341	44	9.46082	48	0.53918	9.98259	4	53
8	9.44385	43	9.46130	47	0.53870	9.98255	4	52
9	9.44428	44	9.46177	47	0.53823	9.98251	3	51
10	**9.44472**	44	**9.46224**	47	**0.53776**	**9.98248**	4	**50**
11	9.44516	43	9.46271	48	0.53729	9.98244	4	49
12	9.44559	43	9.46319	47	0.53681	9.98240	3	48
13	9.44602	44	9.46366	47	0.53634	9.98237	4	47
14	9.44646	43	9.46413	47	0.53587	9.98233	4	46
15	**9.44689**	44	**9.46460**	47	**0.53540**	**9.98229**	3	**45**
16	9.44733	43	9.46507	47	0.53493	9.98226	4	44
17	9.44776	43	9.46554	47	0.53446	9.98222	4	43
18	9.44819	43	9.46601	47	0.53399	9.98218	3	42
19	9.44862	43	9.46648	46	0.53352	9.98215	4	41
20	**9.44905**	43	**9.46694**	47	**0.53306**	**9.98211**	4	**40**
21	9.44948	44	9.46741	47	0.53259	9.98207	3	39
22	9.44992	43	9.46788	47	0.53212	9.98204	4	38
23	9.45035	42	9.46835	46	0.53165	9.98200	4	37
24	9.45077	43	9.46881	47	0.53119	9.98196	4	36
25	**9.45120**	43	**9.46928**	47	**0.53072**	**9.98192**	3	**35**
26	9.45163	43	9.46975	46	0.53025	9.98189	4	34
27	9.45206	43	9.47021	47	0.52979	9.98185	4	33
28	9.45249	43	9.47068	46	0.52932	9.98181	4	32
29	9.45292	42	9.47114	46	0.52886	9.98177	3	31
30	**9.45334**	43	**9.47160**	47	**0.52840**	**9.98174**	4	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	48	47
1	0.8	0.8
2	1.6	1.6
3	2.4	2.4
4	3.2	3.1
5	4.0	3.9
6	4.8	4.7
7	5.6	5.5
8	6.4	6.3
9	7.2	7.1
10	8.0	7.8
20	16.0	15.7
30	24.0	23.5
40	32.0	31.3
50	40.0	39.2

	46	45
1	0.8	0.8
2	1.5	1.5
3	2.3	2.3
4	3.1	3.0
5	3.8	3.8
6	4.6	4.
7	5.4	5.
8	6.1	6.0
9	6.9	6.8
10	7.7	7.5
20	15.3	15.0
30	23.0	22.
40	30.7	30.
50	38.3	37.

	44	43
1	0.7	0.7
2	1.5	1.4
3	2.2	2.2
4	2.9	2.9
5	3.7	3.6
6	4.4	4.3
7	5.1	5.0
8	5.9	5.7
9	6.6	6.5
10	7.3	7.2
20	14.7	14.3
30	22.0	21.5
40	29.3	28.7
50	36.7	35.8

PP,

73°

16°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.45334**	43	**9.47160**	47	**0.52840**	**9.98174**	4	**30**
31	9.45377	42	9.47207	46	0.52793	9.98170	4	29
32	9.45419	43	9.47253	46	0.52747	9.98166	4	28
33	9.45462	42	9.47299	47	0.52701	9.98162	3	27
34	9.45504	43	9.47346	46	0.52654	9.98159	4	26
35	**9.45547**	42	**9.47392**	46	**0.52608**	**9.98155**	4	**25**
36	9.45589	43	9.47438	46	0.52562	9.98151	4	24
37	9.45632	42	9.47484	46	0.52516	9.98147	3	23
38	9.45674	42	9.47530	46	0.52470	9.98144	4	22
39	9.45716	42	9.47576	46	0.52424	9.98140	4	21
40	**9.45758**	43	**9.47622**	46	**0.52378**	**9.98136**	4	**20**
41	9.45801	42	9.47668	46	0.52332	9.98132	3	19
42	9.45843	42	9.47714	46	0.52286	9.98129	4	18
43	9.45885	42	9.47760	46	0.52240	9.98125	4	17
44	9.45927	42	9.47806	46	0.52194	9.98121	4	16
45	**9.45969**	42	**9.47852**	45	**0.52148**	**9.98117**	4	**15**
46	9.46011	42	9.47897	46	0.52103	9.98113	3	14
47	9.46053	42	9.47943	46	0.52057	9.98110	4	13
48	9.46095	41	9.47989	46	0.52011	9.98106	4	12
49	9.46136	42	9.48035	45	0.51965	9.98102	4	11
50	**9.46178**	42	**9.48080**	46	**0.51920**	**9.98098**	4	**10**
51	9.46220	42	9.48126	45	0.51874	9.98094	4	9
52	9.46262	41	9.48171	46	0.51829	9.98090	3	8
53	9.46303	42	9.48217	45	0.51783	9.98087	4	7
54	9.46345	41	9.48262	45	0.51738	9.98083	4	6
55	**9.46386**	42	**9.48307**	46	**0.51693**	**9.98079**	4	**5**
56	9.46428	41	9.48353	45	0.51647	9.98075	4	4
57	9.46469	42	9.48398	45	0.51602	9.98071	4	3
58	9.46511	41	9.48443	46	0.51557	9.98067	4	2
59	9.46552	42	9.48489	45	0.51511	9.98063	3	1
60	**9.46594**	41	**9.48534**	45	**0.51466**	**9.98060**	4	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	46	45
1	0.8	0.8
2	1.5	1.5
3	2.3	2.3
4	3.1	3.0
5	3.8	3.8
6	4.6	4.5
7	5.4	5.3
8	6.1	6.0
9	6.9	6.8
10	7.7	7.5
20	15.3	15.0
30	23.0	22.5
40	30.7	30.0
50	38.3	37.5

	44	43
1	0.7	0.7
2	1.5	1.4
3	2.2	2.2
4	2.9	2.9
5	3.7	3.6
6	4.4	4.3
7	5.1	5.0
8	5.9	5.7
9	6.6	6.5
10	7.3	7.2
20	14.7	14.3
30	22.0	21.5
40	29.3	28.7
50	36.7	35.8

	42	41
1	0.7	0.7
2	1.4	1.4
3	2.1	2.1
4	2.8	2.7
5	3.5	3.4
6	4.2	4.1
7	4.9	4.8
8	5.6	5.5
9	6.3	6.2
10	7.0	6.8
20	14.0	13.7
30	21.0	20.5
40	28.0	27.3
50	35.0	34.2

PP.

73°

17°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.46594**	41	**9.48534**	45	**0.51466**	**9.98060**	4	**60**
1	9.46635	41	9.48579	45	0.51421	9.98056	4	59
2	9.46676	41	9.48624	45	0.51376	9.98052	4	58
3	9.46717	41	9.48669	45	0.51331	9.98048	4	57
4	9.46758	42	9.48714	45	0.51286	9.98044	4	56
5	**9.46800**	41	**9.48759**	45	**0.51241**	**9.98040**	4	**55**
6	9.46841	41	9.48804	45	0.51196	9.98036	4	54
7	9.46882	41	9.48849	45	0.51151	9.98032	3	53
8	9.46923	41	9.48894	45	0.51106	9.98029	4	52
9	9.46964	41	9.48939	45	0.51061	9.98025	4	51
10	**9.47005**	40	**9.48984**	45	**0.51016**	**9.98021**	4	**50**
11	9.47045	41	9.49029	44	0.50971	9.98017	4	49
12	9.47086	41	9.49073	45	0.50927	9.98013	4	48
13	9.47127	41	9.49118	45	0.50882	9.98009	4	47
14	9.47168	41	9.49163	44	0.50837	9.98005	4	46
15	**9.47209**	40	**9.49207**	45	**0.50793**	**9.98001**	4	**45**
16	9.47249	41	9.49252	44	0.50748	9.97997	4	44
17	9.47290	40	9.49296	45	0.50704	9.97993	4	43
18	9.47330	41	9.49341	44	0.50659	9.97989	3	42
19	9.47371	40	9.49385	45	0.50615	9.97986	4	41
20	**9.47411**	41	**9.49430**	44	**0.50570**	**9.97982**	4	**40**
21	9.47452	40	9.49474	45	0.50526	9.97978	4	39
22	9.47492	41	9.49519	44	0.50481	9.97974	4	38
23	9.47533	40	9.49563	44	0.50437	9.97970	4	37
24	9.47573	40	9.49607	45	0.50393	9.97966	4	36
25	**9.47613**	41	**9.49652**	44	**0.50348**	**9.97962**	4	**35**
26	9.47654	40	9.49696	44	0.50304	9.97958	4	34
27	9.47694	40	9.49740	44	0.50260	9.97954	4	33
28	9.47734	40	9.49784	44	0.50216	9.97950	4	32
29	9.47774	40	9.49828	44	0.50172	9.97946	4	31
30	**9.47814**	40	**9.49872**	44	**0.50128**	**9.97942**	4	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	45	44
1	0.8	0.7
2	1.5	1.5
3	2.3	2.2
4	3.0	2.9
5	3.8	3.7
6	4.5	4.4
7	5.3	5.1
8	6.0	5.9
9	6.8	6.6
10	7.5	7.3
20	15.0	14.7
30	22.5	22.0
40	30.0	29.3
50	37.5	36.7

	43	42
1	0.7	0.7
2	1.4	1.4
3	2.2	2.1
4	2.9	2.8
5	3.6	3.5
6	4.3	4.2
7	5.0	4.9
8	5.7	5.6
9	6.5	6.3
10	7.2	7.0
20	14.3	14.0
30	21.5	21.0
40	28.7	28.0
50	35.8	35.0

	41	40
1	0.7	0.7
2	1.4	1.3
3	2.1	2.0
4	2.7	2.7
5	3.4	3.3
6	4.1	4.0
7	4.8	4.7
8	5.5	5.3
9	6.2	6.0
10	6.8	6.7
20	13.7	13.3
30	20.5	20.0
40	27.3	26.7
50	34.2	33.3

PP.

72°

17°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.47814**	40	**9.49872**	44	**0.50128**	**9.97942**	4	**30**
31	9.47854	40	9.49916	44	0.50084	9.97938	4	29
32	9.47894	40	9.49960	44	0.50040	9.97934	4	28
33	9.47934	40	9.50004	44	0.49996	9.97930	4	27
34	9.47974	40	9.50048	44	0.49952	9.97926	4	26
35	**9.48014**	40	**9.50092**	44	**0.49908**	**9.97922**	4	**25**
36	9.48054	40	9.50136	44	0.49864	9.97918	4	24
37	9.48094	39	9.50180	43	0.49820	9.97914	4	23
38	9.48133	40	9.50223	44	0.49777	9.97910	4	22
39	9.48173	40	9.50267	44	0.49733	9.97906	4	21
40	**9.48213**	39	**9.50311**	44	**0.49689**	**9.97902**	4	**20**
41	9.48252	40	9.50355	43	0.49645	9.97898	4	19
42	9.48292	40	9.50398	44	0.49602	9.97894	4	18
43	9.48332	39	9.50442	43	0.49558	9.97890	4	17
44	9.48371	40	9.50485	44	0.49515	9.97886	4	16
45	**9.48411**	39	**9.50529**	43	**0.49471**	**9.97882**	4	**15**
46	9.48450	40	9.50572	44	0.49428	9.97878	4	14
47	9.48490	39	9.50616	43	0.49384	9.97874	4	13
48	9.48529	39	9.50659	44	0.49341	9.97870	4	12
49	9.48568	39	9.50703	43	0.49297	9.97866	5	11
50	**9.48607**	40	**9.50746**	43	**0.49254**	**9.97861**	4	**10**
51	9.48647	39	9.50789	44	0.49211	9.97857	4	9
52	9.48686	39	9.50833	43	0.49167	9.97853	4	8
53	9.48725	39	9.50876	43	0.49124	9.97849	4	7
54	9.48764	39	9.50919	43	0.49081	9.97845	4	6
55	**9.48803**	39	**9.50962**	43	**0.49038**	**9.97841**	4	**5**
56	9.48842	39	9.51005	43	0.48995	9.97837	4	4
57	9.48881	39	9.51048	44	0.48952	9.97833	4	3
58	9.48920	39	9.51092	43	0.48908	9.97829	4	2
59	9.48959	39	9.51135	43	0.48865	9.97825	4	1
60	**9.48998**	39	**9.51178**	43	**0.48822**	**9.97821**	4	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	44	43
1	0.7	0.7
2	1.5	1.4
3	2.2	2.2
4	2.9	2.9
5	3.7	3.6
6	4.4	4.3
7	5.1	5.0
8	5.9	5.7
9	6.6	6.5
10	7.3	7.2
20	14.7	14.3
30	22.0	21.5
40	29.3	28.7
50	36.7	35.8

	42	41
1	0.7	0.7
2	1.4	1.4
3	2.1	2.1
4	2.8	2.7
5	3.5	3.4
6	4.2	4.1
7	4.9	4.8
8	5.6	5.5
9	6.3	6.2
10	7.0	6.8
20	14.0	13.7
30	21.0	20.5
40	28.0	27.3
50	35.0	34.2

	40	39
1	0.7	0.7
2	1.3	1.3
3	2.0	2.0
4	2.7	2.6
5	3.3	3.3
6	4.0	3.9
7	4.7	4.6
8	5.3	5.2
9	6.0	5.9
10	6.7	6.5
20	13.3	13.0
30	20.0	19.5
40	26.7	26.0
50	33.3	32.5

	4	5
10	0.7	0.8
20	1.3	1.7
30	2.0	2.5
40	2.7	3.3
50	3.3	4.2

PP.

72°

18°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.48998**		**9.51178**		**0.48822**	**9.97821**		**60**
		39		43			4	
1	9.49037		9.51221		0.48779	9.97817		59
		39		43			5	
2	9.49076		9.51264		0.48736	9.97812		58
		39		42			4	
3	9.49115		9.51306		0.48694	9.97808		57
		38		43			4	
4	9.49153		9.51349		0.48651	9.97804		56
		39		43			4	
5	**9.49192**		**9.51392**		**0.48608**	**9.97800**		**55**
		39		43			4	
6	9.49231		9.51435		0.48565	9.97796		54
		38		43			4	
7	9.49269		9.51478		0.48522	9.97792		53
		39		42			4	
8	9.49308		9.51520		0.48480	9.97788		52
		39		43			4	
9	9.49347		9.51563		0.48437	9.97784		51
		38		43			5	
10	**9.49385**		**9.51606**		**0.48394**	**9.97779**		**50**
		39		42			4	
11	9.49424		9.51648		0.48352	9.97775		49
		38		43			4	
12	9.49462		9.51691		0.48309	9.97771		48
		38		43			4	
13	9.49500		9.51734		0.48266	9.97767		47
		39		42			4	
14	9.49539		9.51776		0.48224	9.97763		46
		38		43			4	
15	**9.49577**		**9.51819**		**0.48181**	**9.97759**		**45**
		38		42			5	
16	9.49615		9.51861		0.48139	9.97754		44
		39		42			4	
17	9.49654		9.51903		0.48097	9.97750		43
		38		43			4	
18	9.49692		9.51946		0.48054	9.97746		42
		38		42			4	
19	9.49730		9.51988		0.48012	9.97742		41
		38		43			4	
20	**9.49768**		**9.52031**		**0.47969**	**9.97738**		**40**
		38		42			4	
21	9.49806		9.52073		0.47927	9.97734		39
		38		42			5	
22	9.49844		9.52115		0.47885	9.97729		38
		38		42			4	
23	9.49882		9.52157		0.47843	9.97725		37
		38		43			4	
24	9.49920		9.52200		0.47800	9.97721		36
		38		42			4	
25	**9.49958**		**9.52242**		**0.47758**	**9.97717**		**35**
		38		42			4	
26	9.49996		9.52284		0.47716	9.97713		34
		38		42			5	
27	9.50034		9.52326		0.47674	9.97708		33
		38		42			4	
28	9.50072		9.52368		0.47632	9.97704		32
		38		42			4	
29	9.50110		9.52410		0.47590	9.97700		31
		38		42			4	
30	**9.50148**		**9.52452**		**0.47548**	**9.97696**		**30**
		37		42			5	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	43	42
1	0.7	0.7
2	1.4	1.4
3	2.2	2.1
4	2.9	2.8
5	3.6	3.5
6	4.3	4.2
7	5.0	4.9
8	5.7	5.6
9	6.5	6.3
10	7.2	7.0
20	14.3	14.0
30	21.5	21.0
40	28.7	28.0
50	35.8	35.0

	41	39
1	0.7	0.7
2	1.4	1.3
3	2.1	2.0
4	2.7	2.6
5	3.4	3.3
6	4.1	3.9
7	4.8	4.6
8	5.5	5.2
9	6.2	5.9
10	6.8	6.
20	13.7	13.
30	20.5	19.
40	27.3	26.
50	34.2	32.

	38	37
1	0.6	0.
2	1.3	1.
3	1.9	1.
4	2.5	2.
5	3.2	3.
6	3.8	3.
7	4.4	4.
8	5.1	4.
9	5.7	5.
10	6.3	6.
20	12.7	12.
30	19.0	18.
40	25.3	24.
50	31.7	30.

	4	5
10	0.7	0.
20	1.3	1.
30	2.0	2.
40	2.7	3.
50	3.3	4.

PP.

71°

18°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.50148**		**9.52452**		**0.47548**	**9.97696**		**30**
		37		42			5	
31	9.50185		9.52494		0.47506	9.97691		29
		38		42			4	
32	9.50223		9.52536		0.47464	9.97687		28
		38		42			4	
33	9.50261		9.52578		0.47422	9.97683		27
		37		42			4	
34	9.50298		9.52620		0.47380	9.97679		26
		38		41			5	
35	**9.50336**		**9.52661**		**0.47339**	**9.97674**		**25**
		38		42			4	
36	9.50374		9.52703		0.47297	9.97670		24
		37		42			4	
37	9.50411		9.52745		0.47255	9.97666		23
		38		42			4	
38	9.50449		9.52787		0.47213	9.97662		22
		37		42			5	
39	9.50486		9.52829		0.47171	9.97657		21
		37		41			4	
40	**9.50523**		**9.52870**		**0.47130**	**9.97653**		**20**
		38		42			4	
41	9.50561		9.52912		0.47088	9.97649		19
		37		41			4	
42	9.50598		9.52953		0.47047	9.97645		18
		37		42			5	
43	9.50635		9.52995		0.47005	9.97640		17
		38		42			4	
44	9.50673		9.53037		0.46963	9.97636		16
		37		41			4	
45	**9.50710**		**9.53078**		**0.46922**	**9.97632**		**15**
		37		42			4	
46	9.50747		9.53120		0.46880	9.97628		14
		37		41			5	
47	9.50784		9.53161		0.46839	9.97623		13
		37		41			4	
48	9.50821		9.53202		0.46798	9.97619		12
		37		42			4	
49	9.50858		9.53244		0.46756	9.97615		11
		38		41			5	
50	**9.50896**		**9.53285**		**0.46715**	**9.97610**		**10**
		37		42			4	
51	9.50933		9.53327		0.46673	9.97606		9
		37		41			4	
52	9.50970		9.53368		0.46632	9.97602		8
		37		41			5	
53	9.51007		9.53409		0.46591	9.97597		7
		36		41			4	
54	9.51043		9.53450		0.46550	9.97593		6
		37		42			4	
55	**9.51080**		**9.53492**		**0.46508**	**9.97589**		**5**
		37		41			5	
56	9.51117		9.53533		0.46467	9.97584		4
		37		41			4	
57	9.51154		9.53574		0.46426	9.97580		3
		37		41			4	
58	9.51191		9.53615		0.46385	9.97576		2
		36		41			5	
59	9.51227		9.53656		0.46344	9.97571		1
		37		41			4	
60	**9.51264**		**9.53697**		**0.46303**	**9.97567**		**0**
		37		41			4	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	42	41
1	0.7	0.7
2	1.4	1.4
3	2.1	2.1
4	2.8	2.7
5	3.5	3.4
6	4.2	4.1
7	4.9	4.8
8	5.6	5.5
9	6.3	6.2
10	7.0	6.8
20	14.0	13.7
30	21.0	20.5
40	28.0	27.3
50	35.0	34.2

	39	38
1	0.7	0.6
2	1.3	1.3
3	2.0	1.9
4	2.6	2.5
5	3.3	3.2
6	3.9	3.8
7	4.6	4.4
8	5.2	5.1
9	5.9	5.7
10	6.5	6.3
20	13.0	12.7
30	19.5	19.0
40	26.0	25.3
50	32.5	31.7

	37	36
1	0.6	0.6
2	1.2	1.2
3	1.9	1.8
4	2.5	2.4
5	3.1	3.0
6	3.7	3.6
7	4.3	4.2
8	4.9	4.8
9	5.6	5.4
10	6.2	6.0
20	12.3	12.0
30	18.5	18.0
40	24.7	24.0
50	30.8	30.0

	4	5
10	0.7	0.8
20	1.3	1.7
30	2.0	2.5
40	2.7	3.3
50	3.3	4.2

PP.

71°

19°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.51264**	37	**9.53697**	41	**0.46303**	**9.97567**	4	**60**
1	9.51301	37	9.53738	41	0.46262	9.97563	5	59
2	9.51338	36	9.53779	41	0.46221	9.97558	4	58
3	9.51374	37	9.53820	41	0.46180	9.97554	4	57
4	9.51411	36	9.53861	41	0.46139	9.97550	5	56
5	**9.51447**	37	**9.53902**	41	**0.46098**	**9.97545**	4	**55**
6	9.51484	36	9.53943	41	0.46057	9.97541	5	54
7	9.51520	37	9.53984	41	0.46016	9.97536	4	53
8	9.51557	36	9.54025	40	0.45975	9.97532	4	52
9	9.51593	36	9.54065	41	0.45935	9.97528	5	51
10	**9.51629**	37	**9.54106**	41	**0.45894**	**9.97523**	4	**50**
11	9.51666	36	9.54147	40	0.45853	9.97519	4	49
12	9.51702	36	9.54187	41	0.45813	9.97515	5	48
13	9.51738	36	9.54228	41	0.45772	9.97510	4	47
14	9.51774	37	9.54269	40	0.45731	9.97506	5	46
15	**9.51811**	36	**9.54309**	41	**0.45691**	**9.97501**	4	**45**
16	9.51847	36	9.54350	40	0.45650	9.97497	5	44
17	9.51883	36	9.54390	41	0.45610	9.97492	4	43
18	9.51919	36	9.54431	40	0.45569	9.97488	4	42
19	9.51955	36	9.54471	41	0.45529	9.97484	5	41
20	**9.51991**	36	**9.54512**	40	**0.45488**	**9.97479**	4	**40**
21	9.52027	36	9.54552	41	0.45448	9.97475	5	39
22	9.52063	36	9.54593	40	0.45407	9.97470	4	38
23	9.52099	36	9.54633	40	0.45367	9.97466	5	37
24	9.52135	36	9.54673	41	0.45327	9.97461	4	36
25	**9.52171**	36	**9.54714**	40	**0.45286**	**9.97457**	4	**35**
26	9.52207	35	9.54754	40	0.45246	9.97453	5	34
27	9.52242	36	9.54794	41	0.45206	9.97448	4	33
28	9.52278	36	9.54835	40	0.45165	9.97444	5	32
29	9.52314	36	9.54875	40	0.45125	9.97439	4	31
30	**9.52350**	35	**9.54915**	40	**0.45085**	**9.97435**	5	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	41	40
1	0.7	0.7
2	1.4	1.3
3	2.1	2.0
4	2.7	2.7
5	3.4	3.3
6	4.1	4.0
7	4.8	4.7
8	5.5	5.3
9	6.2	6.0
10	6.8	6.7
20	13.7	13.3
30	20.5	20.0
40	27.3	26.7
50	34.2	33.3

	37	36
1	0.6	0.6
2	1.2	1.2
3	1.9	1.8
4	2.5	2.4
5	3.1	3.0
6	3.7	3.6
7	4.3	4.2
8	4.9	4.8
9	5.6	5.4
10	6.2	6.0
20	12.3	12.0
30	18.5	18.0
40	24.7	24.0
50	30.8	30.0

	4	5
10	0.7	0.8
20	1.3	1.7
30	2.0	2.5
40	2.7	3.3
50	3.3	4.2

PP.

70°

19°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.52350**	35	**9.54915**	40	**0.45085**	**9.97435**	5	**30**
31	9.52385	36	9.54955	40	0.45045	9.97430	4	29
32	9.52421	35	9.54995	40	0.45005	9.97426	5	28
33	9.52456	36	9.55035	40	0.44965	9.97421	4	27
34	9.52492	35	9.55075	40	0.44925	9.97417	5	26
35	**9.52527**	36	**9.55115**	40	**0.44885**	**9.97412**	4	**25**
36	9.52563	35	9.55155	40	0.44845	9.97408	5	24
37	9.52598	36	9.55195	40	0.44805	9.97403	4	23
38	9.52634	35	9.55235	40	0.44765	9.97399	5	22
39	9.52669	36	9.55275	40	0.44725	9.97394	4	21
40	**9.52705**	35	**9.55315**	40	**0.44685**	**9.97390**	5	**20**
41	9.52740	35	9.55355	40	0.44645	9.97385	4	19
42	9.52775	36	9.55395	39	0.44605	9.97381	5	18
43	9.52811	35	9.55434	40	0.44566	9.97376	4	17
44	9.52846	35	9.55474	40	0.44526	9.97372	5	16
45	**9.52881**	35	**9.55514**	40	**0.44486**	**9.97367**	4	**15**
46	9.52916	35	9.55554	39	0.44446	9.97363	5	14
47	9.52951	35	9.55593	40	0.44407	9.97358	5	13
48	9.52986	35	9.55633	40	0.44367	9.97353	4	12
49	9.53021	35	9.55673	39	0.44327	9.97349	5	11
50	**9.53056**	36	**9.55712**	40	**0.44288**	**9.97344**	4	**10**
51	9.53092	34	9.55752	39	0.44248	9.97340	5	9
52	9.53126	35	9.55791	40	0.44209	9.97335	4	8
53	9.53161	35	9.55831	39	0.44169	9.97331	5	7
54	9.53196	35	9.55870	40	0.44130	9.97326	4	6
55	**9.53231**	35	**9.55910**	39	**0.44090**	**9.97322**	5	**5**
56	9.53266	35	9.55949	40	0.44051	9.97317	5	4
57	9.53301	35	9.55989	39	0.44011	9.97312	4	3
58	9.53336	34	9.56028	39	0.43972	9.97308	5	2
59	9.53370	35	9.56067	40	0.43933	9.97303	4	1
60	**9.53405**	35	**9.56107**	39	**0.43893**	**9.97299**	5	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	40	39
1	0.7	0.7
2	1.3	1.3
3	2.0	2.0
4	2.7	2.6
5	3.3	3.3
6	4.0	3.9
7	4.7	4.6
8	5.3	5.2
9	6.0	5.9
10	6.7	6.5
20	13.3	13.0
30	20.0	19.5
40	26.7	26.0
50	33.3	32.5

	36
1	0.6
2	1.2
3	1.8
4	2.4
5	3.0
6	3.6
7	4.2
8	4.8
9	5.4
10	6.0
20	12.0
30	18.0
40	24.0
50	30.0

	35	34
1	0.6	0.6
2	1.2	1.1
3	1.8	1.7
4	2.3	2.3
5	2.9	2.8
6	3.5	3.4
7	4.1	4.0
8	4.7	4.5
9	5.3	5.1
10	5.8	5.7
20	11.7	11.3
30	17.5	17.0
40	23.3	22.7
50	29.2	28.3

	4	5
10	0.7	0.8
20	1.3	1.7
30	2.0	2.5
40	2.7	3.3
50	3.3	4.2

PP.

70°

20°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	⬆
0	**9.53405**		**9.56107**		**0.43893**	**9.97299**		**60**
		35		39			5	
1	9.53440		9.56146		0.43854	9.97294		59
		35		39			5	
2	9.53475		9.56185		0.43815	9.97289		58
		34		39			4	
3	9.53509		9.56224		0.43776	9.97285		57
		35		40			5	
4	9.53544		9.56264		0.43736	9.97280		56
		34		39			4	
5	**9.53578**		**9.56303**		**0.43697**	**9.97276**		**55**
		35		39			5	
6	9.53613		9.56342		0.43658	9.97271		54
		34		39			5	
7	9.53647		9.56381		0.43619	9.97266		53
		35		39			4	
8	9.53682		9.56420		0.43580	9.97262		52
		34		39			5	
9	9.53716		9.56459		0.43541	9.97257		51
		35		39			5	
10	**9.53751**		**9.56498**		**0.43502**	**9.97252**		**50**
		34		39			4	
11	9.53785		9.56537		0.43463	9.97248		49
		34		39			5	
12	9.53819		9.56576		0.43424	9.97243		48
		35		39			5	
13	9.53854		9.56615		0.43385	9.97238		47
		34		39			4	
14	9.53888		9.56654		0.43346	9.97234		46
		34		39			5	
15	**9.53922**		**9.56693**		**0.43307**	**9.97229**		**45**
		35		39			5	
16	9.53957		9.56732		0.43268	9.97224		44
		34		39			4	
17	9.53991		9.56771		0.43229	9.97220		43
		34		39			5	
18	9.54025		9.56810		0.43190	9.97215		42
		34		39			5	
19	9.54059		9.56849		0.43151	9.97210		41
		34		38			4	
20	**9.54093**		**9.56887**		**0.43113**	**9.97206**		**40**
		34		39			5	
21	9.54127		9.56926		0.43074	9.97201		39
		34		39			5	
22	9.54161		9.56965		0.43035	9.97196		38
		34		39			4	
23	9.54195		9.57004		0.42996	9.97192		37
		34		38			5	
24	9.54229		9.57042		0.42958	9.97187		36
		34		39			5	
25	**9.54263**		**9.57081**		**0.42919**	**9.97182**		**35**
		34		39			4	
26	9.54297		9.57120		0.42880	9.97178		34
		34		38			5	
27	9.54331		9.57158		0.42842	9.97173		33
		34		39			5	
28	9.54365		9.57197		0.42803	9.97168		32
		34		38			5	
29	9.54399		9.57235		0.42765	9.97163		31
		34		39			4	
30	**9.54433**		**9.57274**		**0.42726**	**9.97159**		**30**
		33		38			5	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	40	39
1	0.7	0.7
2	1.3	1.3
3	2.0	2.0
4	2.7	2.6
5	3.3	3.3
6	4.0	3.9
7	4.7	4.6
8	5.3	5.2
9	6.0	5.9
10	6.7	6.5
20	13.3	13.0
30	20.0	19.5
40	26.7	26.0
50	33.3	32.5

	38	35
1	0.6	0.6
2	1.3	1.2
3	1.9	1.8
4	2.5	2.3
5	3.2	2.9
6	3.8	3.5
7	4.4	4.1
8	5.1	4.7
9	5.7	5.3
10	6.3	5.8
20	12.7	11.7
30	19.0	17.5
40	25.3	23.3
50	31.7	29.2

	34
1	0.6
2	1.1
3	1.7
4	2.3
5	2.8
6	3.4
7	4.0
8	4.5
9	5.1
10	5.7
20	11.3
30	17.0
40	22.7
50	28.3

	4	5
10	0.7	0.8
20	1.3	1.7
30	2.0	2.5
40	2.7	3.3
50	3.3	4.2

PP.

69°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.54433**	33	**9.57274**	38	**0.42726**	**9.97159**	5	**30**
31	9.54466	34	9.57312	39	0.42688	9.97154	5	29
32	9.54500	34	9.57351	38	0.42649	9.97149	4	28
33	9.54534	33	9.57389	39	0.42611	9.97145	5	27
34	9.54567	34	9.57428	38	0.42572	9.97140	5	26
35	**9.54601**	34	**9.57466**	38	**0.42534**	**9.97135**	5	**25**
36	9.54635	33	9.57504	39	0.42496	9.97130	4	24
37	9.54668	34	9.57543	38	0.42457	9.97126	5	23
38	9.54702	33	9.57581	38	0.42419	9.97121	5	22
39	9.54735	34	9.57619	39	0.42381	9.97116	5	21
40	**9.54769**	33	**9.57658**	38	**0.42342**	**9.97111**	4	**20**
41	9.54802	34	9.57696	38	0.42304	9.97107	5	19
42	9.54836	33	9.57734	38	0.42266	9.97102	5	18
43	9.54869	34	9.57772	38	0.42228	9.97097	5	17
44	9.54903	33	9.57810	39	0.42190	9.97092	5	16
45	**9.54936**	33	**9.57849**	38	**0.42151**	**9.97087**	4	**15**
46	9.54969	34	9.57887	38	0.42113	9.97083	5	14
47	9.55003	33	9.57925	38	0.42075	9.97078	5	13
48	9.55036	33	9.57963	38	0.42037	9.97073	5	12
49	9.55069	33	9.58001	38	0.41999	9.97068	5	11
50	**9.55102**	34	**9.58039**	38	**0.41961**	**9.97063**	4	**10**
51	9.55136	33	9.58077	38	0.41923	9.97059	5	9
52	9.55169	33	9.58115	38	0.41885	9.97054	5	8
53	9.55202	33	9.58153	38	0.41847	9.97049	5	7
54	9.55235	33	9.58191	38	0.41809	9.97044	5	6
55	**9.55268**	33	**9.58229**	38	**0.41771**	**9.97039**	4	**5**
56	9.55301	33	9.58267	37	0.41733	9.97035	5	4
57	9.55334	33	9.58304	38	0.41696	9.97030	5	3
58	9.55367	33	9.58342	38	0.41658	9.97025	5	2
59	9.55400	33	9.58380	38	0.41620	9.97020	5	1
60	**9.55433**	33	**9.58418**	37	**0.41582**	**9.97015**	5	0
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	39	38
1	0.7	0.6
2	1.3	1.3
3	2.0	1.9
4	2.6	2.5
5	3.3	3.2
6	3.9	3.8
7	4.6	4.4
8	5.2	5.1
9	5.9	5.7
10	6.5	6.3
20	13.0	12.7
30	19.5	19.0
40	26.0	25.3
50	32.5	31.7

	37
1	0.6
2	1.2
3	1.9
4	2.5
5	3.1
6	3.7
7	4.3
8	4.9
9	5.6
10	6.2
20	12.3
30	18.5
40	24.7
50	30.8

	34	33
1	0.6	0.6
2	1.1	1.1
3	1.7	1.7
4	2.3	2.2
5	2.8	2.8
6	3.4	3.3
7	4.0	3.9
8	4.5	4.4
9	5.1	5.0
10	5.7	5.5
20	11.3	11.0
30	17.0	16.5
40	22.7	22.0
50	28.3	27.5

	4	5
10	0.7	0.8
20	1.3	1.7
30	2.0	2.5
40	2.7	3.3
50	3.3	4.2

PP.

21°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.55433**	33	**9.58418**	37	**0.41582**	**9.97015**	5	**60**
1	9.55466	33	9.58455	38	0.41545	9.97010	5	59
2	9.55499	33	9.58493	38	0.41507	9.97005	4	58
3	9.55532	32	9.58531	38	0.41469	9.97001	5	57
4	9.55564	33	9.58569	37	0.41431	9.96996	5	56
5	**9.55597**	33	**9.58606**	38	**0.41394**	**9.96991**	5	**55**
6	9.55630	33	9.58644	37	0.41356	9.96986	5	54
7	9.55663	32	9.58681	38	0.41319	9.96981	5	53
8	9.55695	33	9.58719	38	0.41281	9.96976	5	52
9	9.55728	33	9.58757	37	0.41243	9.96971	5	51
10	**9.55761**	32	**9.58794**	38	**0.41206**	**9.96966**	4	**50**
11	9.55793	33	9.58832	37	0.41168	9.96962	5	49
12	9.55826	32	9.58869	38	0.41131	9.96957	5	48
13	9.55858	33	9.58907	37	0.41093	9.96952	5	47
14	9.55891	32	9.58944	37	0.41056	9.96947	5	46
15	**9.55923**	33	**9.58981**	38	**0.41019**	**9.96942**	5	**45**
16	9.55956	32	9.59019	37	0.40981	9.96937	5	44
17	9.55988	33	9.59056	38	0.40944	9.96932	5	43
18	9.56021	32	9.59094	37	0.40906	9.96927	5	42
19	9.56053	32	9.59131	37	0.40869	9.96922	5	41
20	**9.56085**	33	**9.59168**	37	**0.40832**	**9.96917**	5	**40**
21	9.56118	32	9.59205	38	0.40795	9.96912	5	39
22	9.56150	32	9.59243	37	0.40757	9.96907	4	38
23	9.56182	33	9.59280	37	0.40720	9.96903	5	37
24	9.56215	32	9.59317	37	0.40683	9.96898	5	36
25	**9.56247**	32	**9.59354**	37	**0.40646**	**9.96893**	5	**35**
26	9.56279	32	9.59391	38	0.40609	9.96888	5	34
27	9.56311	32	9.59429	37	0.40571	9.96883	5	33
28	9.56343	32	9.59466	37	0.40534	9.96878	5	32
29	9.56375	33	9.59503	37	0.40497	9.96873	5	31
30	**9.56408**	32	**9.59540**	37	**0.40460**	**9.96868**	5	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	38	37
1	0.6	0.6
2	1.3	1.2
3	1.9	1.9
4	2.5	2.5
5	3.2	3.1
6	3.8	3.7
7	4.4	4.3
8	5.1	4.9
9	5.7	5.6
10	6.3	6.2
20	12.7	12.3
30	19.0	18.5
40	25.3	24.7
50	31.7	30.8

	33	32
1	0.6	0.5
2	1.2	1.1
3	1.7	1.6
4	2.2	2.1
5	2.8	2.7
6	3.3	3.2
7	3.9	3.7
8	4.4	4.3
9	5.0	4.8
10	5.5	5.3
20	11.0	10.7
30	16.5	16.0
40	22.0	21.3
50	27.5	26.7

	4	5
10	0.7	0.8
20	1.3	1.7
30	2.0	2.5
40	2.7	3.3
50	3.3	4.2

PP.

68°

21°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.56408**	32	**9.59540**	37	**0.40460**	**9.96868**	5	**30**
31	9.56440	32	9.59577	37	0.40423	9.96863	5	29
32	9.56472	32	9.59614	37	0.40386	9.96858	5	28
33	9.56504	32	9.59651	37	0.40349	9.96853	5	27
34	9.56536	32	9.59688	37	0.40312	9.96848	5	26
35	**9.56568**	31	**9.59725**	37	**0.40275**	**9.96843**	5	**25**
36	9.56599	32	9.59762	37	0.40238	9.96838	5	24
37	9.56631	32	9.59799	36	0.40201	9.96833	5	23
38	9.56663	32	9.59835	37	0.40165	9.96828	5	22
39	9.56695	32	9.59872	37	0.40128	9.96823	5	21
40	**9.56727**	32	**9.59909**	37	**0.40091**	**9.96818**	5	**20**
41	9.56759	31	9.59946	37	0.40054	9.96813	5	19
42	9.56790	32	9.59983	36	0.40017	9.96808	5	18
43	9.56822	32	9.60019	37	0.39981	9.96803	5	17
44	9.56854	32	9.60056	37	0.39944	9.96798	5	16
45	**9.56886**	31	**9.60093**	37	**0.39907**	**9.96793**	5	**15**
46	9.56917	32	9.60130	36	0.39870	9.96788	5	14
47	9.56949	31	9.60166	37	0.39834	9.96783	5	13
48	9.56980	32	9.60203	37	0.39797	9.96778	6	12
49	9.57012	32	9.60240	36	0.39760	9.96772	5	11
50	**9.57044**	31	**9.60276**	37	**0.39724**	**9.96767**	5	**10**
51	9.57075	32	9.60313	36	0.39687	9.96762	5	9
52	9.57107	31	9.60349	37	0.39651	9.96757	5	8
53	9.57138	31	9.60386	36	0.39614	9.96752	5	7
54	9.57169	32	9.60422	37	0.39578	9.96747	5	6
55	**9.57201**	31	**9.60459**	36	**0.39541**	**9.96742**	5	**5**
56	9.57232	32	9.60495	37	0.39505	9.96737	5	4
57	9.57264	31	9.60532	36	0.39468	9.96732	5	3
58	9.57295	31	9.60568	37	0.39432	9.96727	5	2
59	9.57326	32	9.60605	36	0.39395	9.96722	5	1
60	**9.57358**	31	**9.60641**	36	**0.39359**	**9.96717**	6	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	37	36
1	0.6	0.6
2	1.2	1.2
3	1.9	1.8
4	2.5	2.4
5	3.1	3.0
6	3.7	3.6
7	4.3	4.2
8	4.9	4.8
9	5.6	5.4
10	6.2	6.0
20	12.3	12.0
30	18.5	18.0
40	24.7	24.0
50	30.8	30.0

	32	31
1	0.5	0.5
2	1.1	1.0
3	1.6	1.6
4	2.1	2.1
5	2.7	2.6
6	3.2	3.1
7	3.7	3.6
8	4.3	4.1
9	4.8	4.7
10	5.3	5.2
20	10.7	10.3
30	16.0	15.5
40	21.3	20.7
50	26.7	25.8

	5	6
10	0.8	1.0
20	1.7	2.0
30	2.5	3.0
40	3.3	4.0
50	4.2	5.0

PP.

68°

22°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	9.57358	31	9.60641	36	0.39359	9.96717	6	60
1	9.57389	31	9.60677	37	0.39323	9.96711	5	59
2	9.57420	31	9.60714	36	0.39286	9.96706	5	58
3	9.57451	31	9.60750	36	0.39250	9.96701	5	57
4	9.57482	32	9.60786	37	0.39214	9.96696	5	56
5	9.57514	31	9.60823	36	0.39177	9.96691	5	55
6	9.57545	31	9.60859	36	0.39141	9.96686	5	54
7	9.57576	31	9.60895	36	0.39105	9.96681	5	53
8	9.57607	31	9.60931	36	0.39069	9.96676	6	52
9	9.57638	31	9.60967	37	0.39033	9.96670	5	51
10	9.57669	31	9.61004	36	0.38996	9.96665	5	50
11	9.57700	31	9.61040	36	0.38960	9.96660	5	49
12	9.57731	31	9.61076	36	0.38924	9.96655	5	48
13	9.57762	31	9.61112	36	0.38888	9.96650	5	47
14	9.57793	31	9.61148	36	0.38852	9.96645	5	46
15	9.57824	31	9.61184	36	0.38816	9.96640	6	45
16	9.57855	30	9.61220	36	0.38780	9.96634	5	44
17	9.57885	31	9.61256	36	0.38744	9.96629	5	43
18	9.57916	31	9.61292	36	0.38708	9.96624	5	42
19	9.57947	31	9.61328	36	0.38672	9.96619	5	41
20	9.57978	30	9.61364	36	0.38636	9.96614	6	40
21	9.58008	31	9.61400	36	0.38600	9.96608	5	39
22	9.58039	31	9.61436	36	0.38564	9.96603	5	38
23	9.58070	31	9.61472	36	0.38528	9.96598	5	37
24	9.58101	30	9.61508	36	0.38492	9.96593	5	36
25	9.58131	31	9.61544	35	0.38456	9.96588	6	35
26	9.58162	30	9.61579	36	0.38421	9.96582	5	34
27	9.58192	31	9.61615	36	0.38385	9.96577	5	33
28	9.58223	30	9.61651	36	0.38349	9.96572	5	32
29	9.58253	31	9.61687	35	0.38313	9.96567	5	31
30	9.58284	30	9.61722	36	0.38278	9.96562	6	30
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds

	37	36
1	0.6	0.6
2	1.2	1.2
3	1.9	1.8
4	2.5	2.4
5	3.1	3.0
6	3.7	3.6
7	4.3	4.2
8	4.9	4.8
9	5.6	5.4
10	6.2	6.0
20	12.3	12.0
30	18.5	18.0
40	24.7	24.0
50	30.8	30.0

	35	32
1	0.6	0.5
2	1.2	1.1
3	1.8	1.6
4	2.3	2.1
5	2.9	2.7
6	3.5	3.2
7	4.1	3.7
8	4.7	4.3
9	5.3	4.8
10	5.8	5.3
20	11.7	10.7
30	17.5	16.0
40	23.3	21.3
50	29.2	26.7

	31	30
1	0.5	0.5
2	1.0	1.0
3	1.6	1.5
4	2.1	2.0
5	2.6	2.5
6	3.1	3.0
7	3.6	3.5
8	4.1	4.0
9	4.7	4.5
10	5.2	5.0
20	10.3	10.0
30	15.5	15.0
40	20.7	20.0
50	25.8	25.0

	5	6
10	0.8	1.0
20	1.7	2.0
30	2.5	3.0
40	3.3	4.0
50	4.2	5.0

PP.

67°

22°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.58284**		**9.61722**		**0.38278**	**9.96562**		**30**
		30		36			6	
31	9.58314		9.61758		0.38242	9.96556		29
		31		36			5	
32	9.58345		9.61794		0.38206	9.96551		28
		30		36			5	
33	9.58375		9.61830		0.38170	9.96546		27
		31		35			5	
34	9.58406		9.61865		0.38135	9.96541		26
		30		36			6	
35	**9.58436**		**9.61901**		**0.38099**	**9.96535**		**25**
		31		35			5	
36	9.58467		9.61936		0.38064	9.96530		24
		30		36			5	
37	9.58497		9.61972		0.38028	9.96525		23
		30		36			5	
38	9.58527		9.62008		0.37992	9.96520		22
		30		35			6	
39	9.58557		9.62043		0.37957	9.96514		21
		31		36			5	
40	**9.58588**		**9.62079**		**0.37921**	**9.96509**		**20**
		30		35			5	
41	9.58618		9.62114		0.37886	9.96504		19
		30		36			6	
42	9.58648		9.62150		0.37850	9.96498		18
		30		35			5	
43	9.58678		9.62185		0.37815	9.96493		17
		31		36			5	
44	9.58709		9.62221		0.37779	9.96488		16
		30		35			5	
45	**9.58739**		**9.62256**		**0.37744**	**9.96483**		**15**
		30		36			6	
46	9.58769		9.62292		0.37708	9.96477		14
		30		35			5	
47	9.58799		9.62327		0.37673	9.96472		13
		30		35			5	
48	9.58829		9.62362		0.37638	9.96467		12
		30		36			6	
49	9.58859		9.62398		0.37602	9.96461		11
		30		35			5	
50	**9.58889**		**9.62433**		**0.37567**	**9.96456**		**10**
		30		35			5	
51	9.58919		9.62468		0.37532	9.96451		9
		30		36			6	
52	9.58949		9.62504		0.37496	9.96445		8
		30		35			5	
53	9.58979		9.62539		0.37461	9.96440		7
		30		35			5	
54	9.59009		9.62574		0.37426	9.96435		6
		30		35			6	
55	**9.59039**		**9.62609**		**0.37391**	**9.96429**		**5**
		30		36			5	
56	9.59069		9.62645		0.37355	9.96424		4
		29		35			5	
57	9.59098		9.62680		0.37320	9.96419		3
		30		35			6	
58	9.59128		9.62715		0.37285	9.96413		2
		30		35			5	
59	9.59158		9.62750		0.37250	9.96408		1
		30		35			5	
60	**9.59188**		**9.62785**		**0.37215**	**9.96403**		**0**
		30		35			6	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	36	35
1	0.6	0.6
2	1.2	1.2
3	1.8	1.8
4	2.4	2.3
5	3.0	2.9
6	3.6	3.5
7	4.2	4.1
8	4.8	4.7
9	5.4	5.3
10	6.0	5.8
20	12.0	11.7
30	18.0	17.5
40	24.0	23.3
50	30.0	29.2

	31	30
1	0.5	0.5
2	1.0	1.0
3	1.6	1.5
4	2.1	2.0
5	2.6	2.5
6	3.1	3.0
7	3.6	3.5
8	4.1	4.0
9	4.7	4.5
10	5.2	5.0
20	10.3	10.0
30	15.5	15.0
40	20.7	20.0
50	25.8	25.0

	5	6
10	0.8	1.0
20	1.7	2.0
30	2.5	3.0
40	3.3	4.0
50	4.2	5.0

PP.

67°

23°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.59188**		**9.62785**		**0.37215**	**9.96403**		**60**
		30		35			6	
1	9.59218		9.62820		0.37180	9.96397		59
		29		35			5	
2	9.59247		9.62855		0.37145	9.96392		58
		30		35			5	
3	9.59277		9.62890		0.37110	9.96387		57
		30		36			6	
4	9.59307		9.62926		0.37074	9.96381		56
		29		35			5	
5	**9.59336**		**9.62961**		**0.37039**	**9.96376**		**55**
		30		35			6	
6	9.59366		9.62996		0.37004	9.96370		54
		30		35			5	
7	9.59396		9.63031		0.36969	9.96365		53
		29		35			5	
8	9.59425		9.63066		0.36934	9.96360		52
		30		35			6	
9	9.59455		9.63101		0.36899	9.96354		51
		29		34			5	
10	**9.59484**		**9.63135**		**0.36865**	**9.96349**		**50**
		30		35			6	
11	9.59514		9.63170		0.36830	9.96343		49
		29		35			5	
12	9.59543		9.63205		0.36795	9.96338		48
		30		35			5	
13	9.59573		9.63240		0.36760	9.96333		47
		29		35			6	
14	9.59602		9.63275		0.36725	9.96327		46
		30		35			5	
15	**9.59632**		**9.63310**		**0.36690**	**9.96322**		**45**
		29		35			6	
16	9.59661		9.63345		0.36655	9.96316		44
		29		34			5	
17	9.59690		9.63379		0.36621	9.96311		43
		30		35			6	
18	9.59720		9.63414		0.36586	9.96305		42
		29		35			5	
19	9.59749		9.63449		0.36551	9.96300		41
		29		35			6	
20	**9.59778**		**9.63484**		**0.36516**	**9.96294**		**40**
		30		35			5	
21	9.59808		9.63519		0.36481	9.96289		39
		29		34			5	
22	9.59837		9.63553		0.36447	9.96284		38
		29		35			6	
23	9.59866		9.63588		0.36412	9.96278		37
		29		35			5	
24	9.59895		9.63623		0.36377	9.96273		36
		29		34			6	
25	**9.59924**		**9.63657**		**0.36343**	**9.96267**		**35**
		30		35			5	
26	9.59954		9.63692		0.36308	9.96262		34
		29		34			6	
27	9.59983		9.63726		0.36274	9.96256		33
		29		35			5	
28	9.60012		9 63761		0.36239	9.96251		32
		29		35			6	
29	9.60041		9.63796		0.36204	9.96245		31
		29		34			5	
30	**9.60070**		**9.63830**		**0.36170**	**9.96240**		**30**
		29		35			6	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	36	35
1	0.6	0.
2	1.2	1.
3	1.8	1.
4	2.4	2.
5	3.0	2.
6	3.6	3.
7	4.2	4.
8	4.8	4.
9	5.4	5.
10	6.0	5.
20	12.0	11.
30	18.0	17.
40	24.0	23.
50	30.0	29.

	34	30
1	0.6	0.
2	1.1	1.
3	1.7	1.
4	2.3	2.
5	2.8	2.
6	3.4	3.
7	4.0	3.
8	4.5	4.
9	5.1	4.
10	5.7	5.
20	11.3	10.
30	17.0	15.
40	22.7	20.
50	28.3	25.

	5	6
10	0.8	1.0
20	1.7	2.0
30	2.5	3.0
40	3.3	4.0
50	4.2	5.0

PP.

66°

23°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	9.60070	29	9.63830	35	0.36170	9.96240	6	30
31	9.60099	29	9.63865	34	0.36135	9.96234	5	29
32	9.60128	29	9.63899	35	0.36101	9.96229	6	28
33	9.60157	29	9.63934	34	0.36066	9.96223	5	27
34	9.60186	29	9.63968	35	0.36032	9.96218	6	26
35	9.60215	29	9.64003	34	0.35997	9.96212	5	25
36	9.60244	29	9.64037	35	0.35963	9.96207	6	24
37	9.60273	29	9.64072	34	0.35928	9.96201	5	23
38	9.60302	29	9.64106	34	0.35894	9.96196	6	22
39	9.60331	28	9.64140	35	0.35860	9.96190	5	21
40	9.60359	29	9.64175	34	0.35825	9.96185	6	20
41	9.60388	29	9.64209	34	0.35791	9.96179	5	19
42	9.60417	29	9.64243	35	0.35757	9.96174	6	18
43	9.60446	28	9.64278	34	0.35722	9.96168	6	17
44	9.60474	29	9.64312	34	0.35688	9.96162	5	16
45	9.60503	29	9.64346	35	0.35654	9.96157	6	15
46	9.60532	29	9.64381	34	0.35619	9.96151	5	14
47	9.60561	28	9.64415	34	0.35585	9.96146	6	13
48	9.60589	29	9.64449	34	0.35551	9.96140	5	12
49	9.60618	28	9.64483	34	0.35517	9.96135	6	11
50	9.60646	29	9.64517	35	0.35483	9.96129	6	10
51	9.60675	29	9.64552	34	0.35448	9.96123	5	9
52	9.60704	28	9.64586	34	0.35414	9.96118	6	8
53	9.60732	29	9.64620	34	0.35380	9.96112	5	7
54	9.60761	28	9.64654	34	0.35346	9.96107	6	6
55	9.60789	29	9.64688	34	0.35312	9.96101	6	5
56	9.60818	28	9.64722	34	0.35278	9.96095	5	4
57	9.60846	29	9.64756	34	0.35244	9.96090	6	3
58	9.60875	28	9.64790	34	0.35210	9.96084	5	2
59	9.60903	28	9.64824	34	0.35176	9.96079	6	1
60	9.60931	29	9.64858	34	0.35142	9.96073	6	0
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	35	34
1	0.6	0.6
2	1.2	1.1
3	1.8	1.7
4	2.3	2.3
5	2.9	2.8
6	3.5	3.4
7	4.1	4.0
8	4.7	4.5
9	5.3	5.1
10	5.8	5.7
20	11.7	11.3
30	17.5	17.0
40	23.3	22.7
50	29.2	28.3

	29	28
1	0.5	0.5
2	1.0	0.9
3	1.5	1.4
4	1.9	1.9
5	2.4	2.3
6	2.9	2.8
7	3.4	3.3
8	3.9	3.7
9	4.4	4.2
10	4.8	4.7
20	9.7	9.3
30	14.5	14.0
40	19.3	18.7
50	24.2	23.3

	5	6
10	0.8	1.0
20	1.7	2.0
30	2.5	3.0
40	3.3	4.0
50	4.2	5.0

PP.

66°

24°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.60931**	29	**9.64858**	34	**0.35142**	**9.96073**	6	**60**
1	9.60960	28	9.64892	34	0.35108	9.96067	5	59
2	9.60988	28	9.64926	34	0.35074	9.96062	6	58
3	9.61016	29	9.64960	34	0.35040	9.96056	6	57
4	9.61045	28	9.64994	34	0.35006	9.96050	5	56
5	**9.61073**	28	**9.65028**	34	**0.34972**	**9.96045**	6	**55**
6	9.61101	28	9.65062	34	0.34938	9.96039	5	54
7	9.61129	29	9.65096	34	0.34904	9.96034	6	53
8	9.61158	28	9.65130	34	0.34870	9.96028	6	52
9	9.61186	28	9.65164	33	0.34836	9.96022	5	51
10	**9.61214**	28	**9.65197**	34	**0.34803**	**9.96017**	6	**50**
11	9.61242	28	9.65231	34	0.34769	9.96011	6	49
12	9.61270	28	9.65265	34	0.34735	9.96005	5	48
13	9.61298	28	9.65299	34	0.34701	9.96000	6	47
14	9.61326	28	9.65333	33	0.34667	9.95994	6	46
15	**9.61354**	28	**9.65366**	34	**0.34634**	**9.95988**	6	**45**
16	9.61382	29	9.65400	34	0.34600	9.95982	5	44
17	9.61411	27	9.65434	33	0.34566	9.95977	6	43
18	9.61438	28	9.65467	34	0.34533	9.95971	6	42
19	9.61466	28	9.65501	34	0.34499	9.95965	5	41
20	**9.61494**	28	**9.65535**	33	**0.34465**	**9.95960**	6	**40**
21	9.61522	28	9.65568	34	0.34432	9.95954	6	39
22	9.61550	28	9.65602	34	0.34398	9.95948	6	38
23	9.61578	28	9.65636	33	0.34364	9.95942	5	37
24	9.61606	28	9.65669	34	0.34331	9.95937	6	36
25	**9.61634**	28	**9.65703**	33	**0.34297**	**9.95931**	6	**35**
26	9.61662	27	9.65736	34	0.34264	9.95925	5	34
27	9.61689	28	9.65770	33	0.34230	9.95920	6	33
28	9.61717	28	9.65803	34	0.34197	9.95914	6	32
29	9.61745	28	9.65837	33	0.34163	9.95908	6	31
30	**9.61773**	27	**9.65870**	34	**0.34130**	**9.95902**	5	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	34	33
1	0.6	0.
2	1.1	1.
3	1.7	1.
4	2.3	2.
5	2.8	2.
6	3.4	3.
7	4.0	3.
8	4.5	4.
9	5.1	5.
10	5.7	5.
20	11.3	11.
30	17.0	16.
40	22.7	22.
50	28.3	27.

	29	28
1	0.5	0.
2	1.0	0.
3	1.5	1.4
4	1.9	1.
5	2.4	2.
6	2.9	2.
7	3.4	3.
8	3.9	3.
9	4.4	4.
10	4.8	4.7
20	9.7	9.
30	14.5	14.
40	19.3	18.7
50	24.2	23.

	5	6
10	0.8	1.0
20	1.7	2.0
30	2.5	3.0
40	3.3	4.0
50	4.2	5.0

PP.

65°

24°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.61773**	27	**9.65870**	34	**0.34130**	**9.95902**	5	**30**
31	9.61800	28	9.65904	33	0.34096	9.95897	6	29
32	9.61828	28	9.65937	34	0.34063	9.95891	6	28
33	9.61856	27	9.65971	33	0.34029	9.95885	6	27
34	9.61883	28	9.66004	34	0.33996	9.95879	6	26
35	**9.61911**	28	**9.66038**	33	**0.33962**	**9.95873**	5	**25**
36	9.61939	27	9.66071	33	0.33929	9.95868	6	24
37	9.61966	28	9.66104	34	0.33896	9.95862	6	23
38	9.61994	27	9.66138	33	0.33862	9.95856	6	22
39	9.62021	28	9.66171	33	0.33829	9.95850	6	21
40	**9.62049**	27	**9.66204**	34	**0.33796**	**9.95844**	5	**20**
41	9.62076	28	9.66238	33	0.33762	9.95839	6	19
42	9.62104	27	9.66271	33	0.33729	9.95833	6	18
43	9.62131	28	9.66304	33	0.33696	9.95827	6	17
44	9.62159	27	9.66337	34	0.33663	9.95821	6	16
45	**9.62186**	28	**9.66371**	33	**0.33629**	**9.95815**	5	**15**
46	9.62214	27	9.66404	33	0.33596	9.95810	6	14
47	9.62241	27	9.66437	33	0.33563	9.95804	6	13
48	9.62268	28	9.66470	33	0.33530	9.95798	6	12
49	9.62296	27	9.66503	34	0.33497	9.95792	6	11
50	**9.62323**	27	**9.66537**	33	**0.33463**	**9.95786**	6	**10**
51	9.62350	27	9.66570	33	0.33430	9.95780	5	9
52	9.62377	28	9.66603	33	0.33397	9.95775	6	8
53	9.62405	27	9.66636	33	0.33364	9.95769	6	7
54	9.62432	27	9.66669	33	0.33331	9.95763	6	6
55	**9.62459**	27	**9.66702**	33	**0.33298**	**9.95757**	6	**5**
56	9.62486	27	9.66735	33	0.33265	9.95751	6	4
57	9.62513	28	9.66768	33	0.33232	9.95745	6	3
58	9.62541	27	9.66801	33	0.33199	9.95739	6	2
59	9.62568	27	9.66834	33	0.33166	9.95733	5	1
60	**9.62595**	27	**9.66867**	33	**0.33133**	**9.95728**	5	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	34	33
1	0.6	0.6
2	1.1	1.1
3	1.7	1.7
4	2.3	2.2
5	2.8	2.8
6	3.4	3.3
7	4.0	3.9
8	4.5	4.4
9	5.1	5.0
10	5.7	5.5
20	11.3	11.0
30	17.0	16.5
40	22.7	22.0
50	28.3	27.5

	28	27
1	0.5	0.5
2	0.9	0.9
3	1.4	1.4
4	1.9	1.8
5	2.3	2.3
6	2.8	2.7
7	3.3	3.2
8	3.7	3.6
9	4.2	4.1
10	4.7	4.5
20	9.3	9.0
30	14.0	13.5
40	18.7	18.0
50	23.3	22.5

	5	6
10	0.8	1.0
20	1.7	2.0
30	2.5	3.0
40	3.3	4.0
50	4.2	5.0

PP.

65°

25°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.62595**	27	**9.66867**	33	**0.33133**	**9.95728**	6	**60**
1	9.62622	27	9.66900	33	0.33100	9.95722	6	59
2	9.62649	27	9.66933	33	0.33067	9.95716	6	58
3	9.62676	27	9.66966	33	0.33034	9.95710	6	57
4	9.62703	27	9.66999	33	0.33001	9.95704	6	56
5	**9.62730**	27	**9.67032**	33	**0.32968**	**9.95698**	6	**55**
6	9.62757	27	9.67065	33	0.32935	9.95692	6	54
7	9.62784	27	9.67098	33	0.32902	9.95686	6	53
8	9.62811	27	9.67131	32	0.32869	9.95680	6	52
9	9.62838	27	9.67163	33	0.32837	9.95674	6	51
10	**9.62865**	27	**9.67196**	33	**0.32804**	**9.95668**	5	**50**
11	9.62892	26	9.67229	33	0.32771	9.95663	6	49
12	9.62918	27	9.67262	33	0.32738	9.95657	6	48
13	9.62945	27	9.67295	32	0.32705	9.95651	6	47
14	9.62972	27	9.67327	33	0.32673	9.95645	6	46
15	**9.62999**	27	**9.67360**	33	**0.32640**	**9.95639**	6	**45**
16	9.63026	26	9.67393	33	0.32607	9.95633	6	44
17	9.63052	27	9.67426	32	0.32574	9.95627	6	43
18	9.63079	27	9.67458	33	0.32542	9.95621	6	42
19	9.63106	27	9.67491	33	0.32509	9.95615	6	41
20	**9.63133**	26	**9.67524**	32	**0.32476**	**9.95609**	6	**40**
21	9.63159	27	9.67556	33	0.32444	9.95603	6	39
22	9.63186	27	9.67589	33	0.32411	9.95597	6	38
23	9.63213	26	9.67622	32	0.32378	9.95591	6	37
24	9.63239	27	9.67654	33	0.32346	9.95585	6	36
25	**9.63266**	26	**9.67687**	32	**0.32313**	**9.95579**	6	**35**
26	9.63292	27	9.67719	33	0.32281	9.95573	6	34
27	9.63319	26	9.67752	33	0.32248	9.95567	6	33
28	9.63345	27	9.67785	32	0.32215	9.95561	6	32
29	9.63372	26	9.67817	33	0.32183	9.95555	6	31
30	**9.63398**	27	**9.67850**	32	**0.32150**	**9.95549**	6	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	33	32
1	0.6	0.5
2	1.1	1.1
3	1.7	1.6
4	2.2	2.1
5	2.8	2.7
6	3.3	3.2
7	3.9	3.7
8	4.4	4.3
9	5.0	4.8
10	5.5	5.3
20	11.0	10.7
30	16.5	16.0
40	22.0	21.3
50	27.5	26.7

	27	26
1	0.5	0.4
2	0.9	0.9
3	1.4	1.3
4	1.8	1.7
5	2.3	2.2
6	2.7	2.6
7	3.2	3.0
8	3.6	3.5
9	4.1	3.9
10	4.5	4.3
20	9.0	8.7
30	13.5	13.0
40	18.0	17.3
50	22.5	21.7

	5	6
10	0.8	1.0
20	1.7	2.0
30	2.5	3.0
40	3.3	4.0
50	4.2	5.0

PP.

64°

25°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.63398**	27	**9.67850**	32	**0.32150**	**9.95549**	6	**30**
31	9.63425	26	9.67882	33	0.32118	9.95543	6	29
32	9.63451	27	9.67915	32	0.32085	9.95537	6	28
33	9.63478	26	9.67947	33	0.32053	9.95531	6	27
34	9.63504	27	9.67980	32	0.32020	9.95525	6	26
35	**9.63531**	26	**9.68012**	32	**0.31988**	**9.95519**	6	**25**
36	9.63557	26	9.68044	33	0.31956	9.95513	6	24
37	9.63583	27	9.68077	32	0.31923	9.95507	7	23
38	9.63610	26	9.68109	33	0.31891	9.95500	6	22
39	9.63636	26	9.68142	32	0.31858	9.95494	6	21
40	**9.63662**	27	**9.68174**	32	**0.31826**	**9.95488**	6	**20**
41	9.63689	26	9.68206	33	0.31794	9.95482	6	19
42	9.63715	26	9.68239	32	0.31761	9.95476	6	18
43	9.63741	26	9.68271	32	0.31729	9.95470	6	17
44	9.63767	27	9.68303	33	0.31697	9.95464	6	16
45	**9.63794**	26	**9.68336**	32	**0.31664**	**9.95458**	6	**15**
46	9.63820	26	9.68368	32	0.31632	9.95452	6	14
47	9.63846	26	9.68400	32	0.31600	9.95446	6	13
48	9.63872	26	9.68432	33	0.31568	9.95440	6	12
49	9.63898	26	9.68465	32	0.31535	9.95434	7	11
50	**9.63924**	26	**9.68497**	32	**0.31503**	**9.95427**	6	**10**
51	9.63950	26	9.68529	32	0.31471	9.95421	6	9
52	9.63976	26	9.68561	32	0.31439	9.95415	6	8
53	9.64002	26	9.68593	33	0.31407	9.95409	6	7
54	9.64028	26	9.68626	32	0.31374	9.95403	6	6
55	**9.64054**	26	**9.68658**	32	**0.31342**	**9.95397**	6	**5**
56	9.64080	26	9.68690	32	0.31310	9.95391	7	4
57	9.64106	26	9.68722	32	0.31278	9.95384	6	3
58	9.64132	26	9.68754	32	0.31246	9.95378	6	2
59	9.64158	26	9.68786	32	0.31214	9.95372	6	1
60	**9.64184**	26	**9.68818**	32	**0.31182**	**9.95366**	6	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	33	32
1	0.6	0.5
2	1.1	1.1
3	1.7	1.6
4	2.2	2.1
5	2.8	2.7
6	3.3	3.2
7	3.9	3.7
8	4.4	4.3
9	5.0	4.8
10	5.5	5.3
20	11.0	10.7
30	16.5	16.0
40	22.0	21.3
50	27.5	26.7

	27	26
1	0.5	0.4
2	0.9	0.9
3	1.4	1.3
4	1.8	1.7
5	2.3	2.2
6	2.7	2.6
7	3.2	3.0
8	3.6	3.5
9	4.1	3.9
10	4.5	4.3
20	9.0	8.7
30	13.5	13.0
40	18.0	17.3
50	22.5	21.7

	6	7
10	1.0	1.2
20	2.0	2.3
30	3.0	3.5
40	4.0	4.7
50	5.0	5.8

PP.

64°

26°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.64184**	26	**9.68818**	32	**0.31182**	**9.95366**	6	**60**
1	9.64210	26	9.68850	32	0.31150	9.95360	6	59
2	9.64236	26	9.68882	32	0.31118	9.95354	6	58
3	9.64262	26	9.68914	32	0.31086	9.95348	7	57
4	9.64288	25	9.68946	32	0.31054	9.95341	6	56
5	**9.64313**	26	**9.68978**	32	**0.31022**	**9.95335**	6	**55**
6	9.64339	26	9.69010	32	0.30990	9.95329	6	54
7	9.64365	26	9.69042	32	0.30958	9.95323	6	53
8	9.64391	26	9.69074	32	0.30926	9.95317	7	52
9	9.64417	25	9.69106	32	0.30894	9.95310	6	51
10	**9.64442**	26	**9.69138**	32	**0.30862**	**9.95304**	6	**50**
11	9.64468	26	9.69170	32	0.30830	9.95298	6	49
12	9.64494	25	9.69202	32	0.30798	9.95292	6	48
13	9.64519	26	9.69234	32	0.30766	9.95286	7	47
14	9.64545	26	9.69266	32	0.30734	9.95279	6	46
15	**9.64571**	25	**9.69298**	31	**0.30702**	**9.95273**	6	**45**
16	9.64596	26	9.69329	32	0.30671	9.95267	6	44
17	9.64622	25	9.69361	32	0.30639	9.95261	7	43
18	9.64647	26	9.69393	32	0.30607	9.95254	6	42
19	9.64673	25	9.69425	32	0.30575	9.95248	6	41
20	**9.64698**	26	**9.69457**	31	**0.30543**	**9.95242**	6	**40**
21	9.64724	25	9.69488	32	0.30512	9.95236	7	39
22	9.64749	26	9.69520	32	0.30480	9.95229	6	38
23	9.64775	25	9.69552	32	0.30448	9.95223	6	37
24	9.64800	26	9.69584	31	0.30416	9.95217	6	36
25	**9.64826**	25	**9.69615**	32	**0.30385**	**9.95211**	7	**35**
26	9.64851	26	9.69647	32	0.30353	9.95204	6	34
27	9.64877	25	9.69679	31	0.30321	9.95198	6	33
28	9.64902	25	9.69710	32	0.30290	9.95192	7	32
29	9.64927	26	9.69742	32	0.30258	9.95185	6	31
30	**9.64953**	25	**9.69774**	31	**0.30226**	**9.95179**	6	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	32	31
1	0.5	0.5
2	1.1	1.0
3	1.6	1.6
4	2.1	2.1
5	2.7	2.6
6	3.2	3.1
7	3.7	3.6
8	4.3	4.1
9	4.8	4.7
10	5.3	5.2
20	10.7	10.3
30	16.0	15.5
40	21.3	20.7
50	26.7	25.8

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	6	7
10	1.0	1.2
20	2.0	2.3
30	3.0	3.5
40	4.0	4.7
50	5.0	5.8

PP.

63°

26°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.64953**	25	**9.69774**	31	**0.30226**	**9.95179**	6	**30**
31	9.64978	25	9.69805	32	0.30195	9.95173	6	29
32	9.65003	26	9.69837	31	0.30163	9.95167	7	28
33	9.65029	25	9.69868	32	0.30132	9.95160	6	27
34	9.65054	25	9.69900	32	0.30100	9.95154	6	26
35	**9.65079**	25	**9.69932**	31	**0.30068**	**9.95148**	7	**25**
36	9.65104	26	9.69963	32	0.30037	9.95141	6	24
37	9.65130	25	9.69995	31	0.30005	9.95135	6	23
38	9.65155	25	9.70026	32	0.29974	9.95129	7	22
39	9.65180	25	9.70058	31	0.29942	9.95122	6	21
40	**9.65205**	25	**9.70089**	32	**0.29911**	**9.95116**	6	**20**
41	9.65230	25	9.70121	31	0.29879	9.95110	7	19
42	9.65255	26	9.70152	32	0.29848	9.95103	6	18
43	9.65281	25	9.70184	31	0.29816	9.95097	7	17
44	9.65306	25	9.70215	32	0.29785	9.95090	6	16
45	**9.65331**	25	**9.70247**	31	**0.29753**	**9.95084**	6	**15**
46	9.65356	25	9.70278	31	0.29722	9.95078	7	14
47	9.65381	25	9.70309	32	0.29691	9.95071	6	13
48	9.65406	25	9.70341	31	0.29659	9.95065	6	12
49	9.65431	25	9.70372	32	0.29628	9.95059	7	11
50	**9.65456**	25	**9.70404**	31	**0.29596**	**9.95052**	6	**10**
51	9.65481	25	9.70435	31	0.29565	9.95046	7	9
52	9.65506	25	9.70466	32	0.29534	9.95039	6	8
53	9.65531	25	9.70498	31	0.29502	9.95033	6	7
54	9.65556	24	9.70529	31	0.29471	9.95027	7	6
55	**9.65580**	25	**9.70560**	32	**0.29440**	**9.95020**	6	**5**
56	9.65605	25	9.70592	31	0.29408	9.95014	7	4
57	9.65630	25	9.70623	31	0.29377	9.95007	6	3
58	9.65655	25	9.70654	31	0.29346	9.95001	6	2
59	9.65680	25	9.70685	32	0.29315	9.94995	7	1
60	**9.65705**	24	**9.70717**	31	**0.29283**	**9.94988**	6	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	32	31
1	0.5	0.5
2	1.1	1.0
3	1.6	1.6
4	2.1	2.1
5	2.7	2.6
6	3.2	3.1
7	3.7	3.6
8	4.3	4.1
9	4.8	4.7
10	5.3	5.2
20	10.7	10.3
30	16.0	15.5
40	21.3	20.7
50	26.7	25.8

	25	24
1	0.4	0.4
2	0.8	0.8
3	1.3	1.2
4	1.7	1.6
5	2.1	2.0
6	2.5	2.4
7	2.9	2.8
8	3.3	3.2
9	3.8	3.6
10	4.2	4.0
20	8.3	8.0
30	12.5	12.0
40	16.7	16.0
50	20.8	20.0

	6	7
10	1.0	1.2
20	2.0	2.3
30	3.0	3.5
40	4.0	4.7
50	5.0	5.8

PP.

63°

27°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.65705**	24	**9.70717**	31	**0.29283**	**9.94988**	6	**60**
1	9.65729	25	9.70748	31	0.29252	9.94982	7	59
2	9.65754	25	9.70779	31	0.29221	9.94975	6	58
3	9.65779	25	9.70810	31	0.29190	9.94969	7	57
4	9.65804	24	9.70841	32	0.29159	9.94962	6	56
5	**9.65828**	25	**9.70873**	31	**0.29127**	**9.94956**	7	**55**
6	9.65853	25	9.70904	31	0.29096	9.94949	6	54
7	9.65878	24	9.70935	31	0.29065	9.94943	7	53
8	9.65902	25	9.70966	31	0.29034	9.94936	6	52
9	9.65927	25	9.70997	31	0.29003	9.94930	7	51
10	**9.65952**	24	**9.71028**	31	**0.28972**	**9.94923**	6	**50**
11	9.65976	25	9.71059	31	0.28941	9.94917	6	49
12	9.66001	24	9.71090	31	0.28910	9.94911	7	48
13	9.66025	25	9.71121	32	0.28879	9.94904	6	47
14	9.66050	25	9.71153	31	0.28847	9.94898	7	46
15	**9.66075**	24	**9.71184**	31	**0.28816**	**9.94891**	6	**45**
16	9.66099	25	9.71215	31	0.28785	9.94885	7	44
17	9.66124	24	9.71246	31	0.28754	9.94878	7	43
18	9.66148	25	9.71277	31	0.28723	9.94871	6	42
19	9.66173	24	9.71308	31	0.28692	9.94865	7	41
20	**9.66197**	24	**9.71339**	31	**0.28661**	**9.94858**	6	**40**
21	9.66221	25	9.71370	31	0.28630	9.94852	7	39
22	9.66246	24	9.71401	30	0.28599	9.94845	6	38
23	9.66270	25	9.71431	31	0.28569	9.94839	7	37
24	9.66295	24	9.71462	31	0.28538	9.94832	6	36
25	**9.66319**	24	**9.71493**	31	**0.28507**	**9.94826**	7	**35**
26	9.66343	25	9.71524	31	0.28476	9.94819	6	34
27	9.66368	24	9.71555	31	0.28445	9.94813	7	33
28	9.66392	24	9.71586	31	0.28414	9.94806	7	32
29	9.66416	25	9.71617	31	0.28383	9.94799	6	31
30	**9.66441**	24	**9.71648**	31	**0.28352**	**9.94793**	7	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds

	32	31
1	0.5	0.5
2	1.1	1.0
3	1.6	1.6
4	2.1	2.1
5	2.7	2.6
6	3.2	3.1
7	3.7	3.6
8	4.3	4.1
9	4.8	4.7
10	5.3	5.2
20	10.7	10.3
30	16.0	15.5
40	21.3	20.7
50	26.7	25.8

	25	24
1	0.4	0.4
2	0.8	0.8
3	1.3	1.2
4	1.7	1.6
5	2.1	2.0
6	2.5	2.4
7	2.9	2.8
8	3.3	3.2
9	3.8	3.6
10	4.2	4.0
20	8.3	8.0
30	12.5	12.0
40	16.7	16.0
50	20.8	20.0

	6	7
10	1.0	1.2
20	2.0	2.3
30	3.0	3.5
40	4.0	4.7
50	5.0	5.8

PP.

62°

27°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.66441**	24	**9.71648**	31	**0.28352**	**9.94793**	7	**30**
31	9.66465	24	9.71679	30	0.28321	9.94786	6	29
32	9.66489	24	9.71709	31	0.28291	9.94780	7	28
33	9.66513	24	9.71740	31	0.28260	9.94773	6	27
34	9.66537	25	9.71771	31	0.28229	9.94767	7	26
35	**9.66562**	24	**9.71802**	31	**0.28198**	**9.94760**	7	**25**
36	9.66586	24	9.71833	30	0.28167	9.94753	6	24
37	9.66610	24	9.71863	31	0.28137	9.94747	7	23
38	9.66634	24	9.71894	31	0.28106	9.94740	6	22
39	9.66658	24	9.71925	30	0.28075	9.94734	7	21
40	**9.66682**	24	**9.71955**	31	**0.28045**	**9.94727**	7	**20**
41	9.66706	25	9.71986	31	0.28014	9.94720	6	19
42	9.66731	24	9.72017	31	0.27983	9.94714	7	18
43	9.66755	24	9.72048	30	0.27952	9.94707	7	17
44	9.66779	24	9.72078	31	0.27922	9.94700	6	16
45	**9.66803**	24	**9.72109**	31	**0.27891**	**9.94694**	7	**15**
46	9.66827	24	9.72140	30	0.27860	9.94687	7	14
47	9.66851	24	9.72170	31	0.27830	9.94680	6	13
48	9.66875	24	9.72201	30	0.27799	9.94674	7	12
49	9.66899	23	9.72231	31	0.27769	9.94667	7	11
50	**9.66922**	24	**9.72262**	31	**0.27738**	**9.94660**	6	**10**
51	9.66946	24	9.72293	30	0.27707	9.94654	7	9
52	9.66970	24	9.72323	31	0.27677	9.94647	7	8
53	9.66994	24	9.72354	30	0.27646	9.94640	6	7
54	9.67018	24	9.72384	31	0.27616	9.94634	7	6
55	**9.67042**	24	**9.72415**	30	**0.27585**	**9.94627**	7	**5**
56	9.67066	24	9.72445	31	0.27555	9.94620	6	4
57	9.67090	23	9.72476	30	0.27524	9.94614	7	3
58	9.67113	24	9.72506	31	0.27494	9.94607	7	2
59	9.67137	24	9.72537	30	0.27463	9.94600	7	1
60	**9.67161**	24	**9.72567**	31	**0.27433**	**9.94593**	6	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	31	30
1	0.5	0.5
2	1.0	1.0
3	1.6	1.5
4	2.1	2.0
5	2.6	2.5
6	3.1	3.0
7	3.6	3.5
8	4.1	4.0
9	4.7	4.5
10	5.2	5.0
20	10.3	10.0
30	15.5	15.0
40	20.7	20.0
50	25.8	25.0

	24	23
1	0.4	0.4
2	0.8	0.8
3	1.2	1.2
4	1.6	1.5
5	2.0	1.9
6	2.4	2.3
7	2.8	2.7
8	3.2	3.1
9	3.6	3.5
10	4.0	3.8
20	8.0	7.7
30	12.0	11.5
40	16.0	15.3
50	20.0	19.2

	6	7
10	1.0	1.2
20	2.0	2.3
30	3.0	3.5
40	4.0	4.7
50	5.0	5.8

PP.

62°

28°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.67161**	24	**9.72567**	31	**0.27433**	**9.94593**	6	**60**
1	9.67185	23	9.72598	30	0.27402	9.94587	7	59
2	9.67208	24	9.72628	31	0.27372	9.94580	7	58
3	9.67232	24	9.72659	30	0.27341	9.94573	6	57
4	9.67256	24	9.72689	31	0.27311	9.94567	7	56
5	**9.67280**	23	**9.72720**	30	**0.27280**	**9.94560**	7	**55**
6	9.67303	24	9.72750	30	0.27250	9.94553	7	54
7	9.67327	23	9.72780	31	0.27220	9.94546	6	53
8	9.67350	24	9.72811	30	0.27189	9.94540	7	52
9	9.67374	24	9.72841	31	0.27159	9.94533	7	51
10	**9.67398**	23	**9.72872**	30	**0.27128**	**9.94526**	7	**50**
11	9.67421	24	9.72902	30	0.27098	9.94519	6	49
12	9.67445	23	9.72932	31	0.27068	9.94513	7	48
13	9.67468	24	9.72963	30	0.27037	9.94506	7	47
14	9.67492	23	9.72993	30	0.27007	9.94499	7	46
15	**9.67515**	24	**9.73023**	31	**0.26977**	**9.94492**	7	**45**
16	9.67539	23	9.73054	30	0.26946	9.94485	6	44
17	9.67562	24	9.73084	30	0.26916	9.94479	7	43
18	9.67586	23	9.73114	30	0.26886	9.94472	7	42
19	9.67609	24	9.73144	31	0.26856	9.94465	7	41
20	**9.67633**	23	**9.73175**	30	**0.26825**	**9.94458**	7	**40**
21	9.67656	24	9.73205	30	0.26795	9.94451	6	39
22	9.67680	23	9.73235	30	0.26765	9.94445	7	38
23	9.67703	23	9.73265	30	0.26735	9.94438	7	37
24	9.67726	24	9.73295	31	0.26705	9.94431	7	36
25	**9.67750**	23	**9.73326**	30	**0.26674**	**9.94424**	7	**35**
26	9.67773	23	9.73356	30	0.26644	9.94417	7	34
27	9.67796	24	9.73386	30	0.26614	9.94410	6	33
28	9.67820	23	9.73416	30	0.26584	9.94404	7	32
29	9.67843	23	9.73446	30	0.26554	9.94397	7	31
30	**9.67866**	24	**9.73476**	31	**0.26524**	**9.94390**	7	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	31	30
1	0.5	0.5
2	1.0	1.0
3	1.6	1.5
4	2.1	2.0
5	2.6	2.5
6	3.1	3.0
7	3.6	3.5
8	4.1	4.0
9	4.7	4.5
10	5.2	5.0
20	10.3	10.0
30	15.5	15.0
40	20.7	20.0
50	25.8	25.0

	24	23
1	0.4	0.4
2	0.8	0.8
3	1.2	1.2
4	1.6	1.5
5	2.0	1.9
6	2.4	2.3
7	2.8	2.7
8	3.2	3.1
9	3.6	3.5
10	4.0	3.8
20	8.0	7.7
30	12.0	11.5
40	16.0	15.3
50	20.0	19.2

	6	7
10	1.0	1.2
20	2.0	2.3
30	3.0	3.5
40	4.0	4.7
50	5.0	5.8

PP.

61°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.67866**		**9.73476**		**0.26524**	**9.94390**		**30**
		24		31			7	
31	9.67890		9.73507		0.26493	9.94383		29
		23		30			7	
32	9.67913		9.73537		0.26463	9.94376		28
		23		30			7	
33	9.67936		9.73567		0.26433	9.94369		27
		23		30			7	
34	9.67959		9.73597		0.26403	9.94362		26
		23		30			7	
35	**9.67982**		**9.73627**		**0.26373**	**9.94355**		**25**
		24		30			6	
36	9.68006		9.73657		0.26343	9.94349		24
		23		30			7	
37	9.68029		9.73687		0.26313	9.94342		23
		23		30			7	
38	9.68052		9.73717		0.26283	9.94335		22
		23		30			7	
39	9.68075		9.73747		0.26253	9.94328		21
		23		30			7	
40	**9.68098**		**9.73777**		**0.26223**	**9.94321**		**20**
		23		30			7	
41	9.68121		9.73807		0.26193	9.94314		19
		23		30			7	
42	9.68144		9.73837		0.26163	9.94307		18
		23		30			7	
43	9.68167		9.73867		0.26133	9.94300		17
		23		30			7	
44	9.68190		9.73897		0.26103	9.94293		16
		23		30			7	
45	**9.68213**		**9.73927**		**0.26073**	**9.94286**		**15**
		24		30			7	
46	9.68237		9.73957		0.26043	9.94279		14
		23		30			6	
47	9.68260		9.73987		0.26013	9.94273		13
		23		30			7	
48	9.68283		9.74017		0.25983	9.94266		12
		22		30			7	
49	9.68305		9.74047		0.25953	9.94259		11
		23		30			7	
50	**9.68328**		**9.74077**		**0.25923**	**9.94252**		**10**
		23		30			7	
51	9.68351		9.74107		0.25893	9.94245		9
		23		30			7	
52	9.68374		9.74137		0.25863	9.94238		8
		23		29			7	
53	9.68397		9.74166		0.25834	9.94231		7
		23		30			7	
54	9.68420		9.74196		0.25804	9.94224		6
		23		30			7	
55	**9.68443**		**9.74226**		**0.25774**	**9.94217**		**5**
		23		30			7	
56	9.68466		9.74256		0.25744	9.94210		4
		23		30			7	
57	9.68489		9.74286		0.25714	9.94203		3
		23		30			7	
58	9.68512		9.74316		0.25684	9.94196		2
		22		29			7	
59	9.68534		9.74345		0.25655	9.94189		1
		23		30			7	
60	**9.68557**		**9.74375**		**0.25625**	**9.94182**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	30	29
1	0.5	0.5
2	1.0	1.0
3	1.5	1.5
4	2.0	1.9
5	2.5	2.4
6	3.0	2.9
7	3.5	3.4
8	4.0	3.9
9	4.5	4.4
10	5.0	4.8
20	10.0	9.7
30	15.0	14.5
40	20.0	19.3
50	25.0	24.2

	23	22
1	0.4	0.4
2	0.8	0.7
3	1.2	1.1
4	1.5	1.5
5	1.9	1.8
6	2.3	2.2
7	2.7	2.6
8	3.1	2.9
9	3.5	3.3
10	3.8	3.7
20	7.7	7.3
30	11.5	11.0
40	15.3	14.7
50	19.2	18.3

	6	7
10	1.0	1.2
20	2.0	2.3
30	3.0	3.5
40	4.0	4.7
50	5.0	5.8

PP.

29°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.68557**	23	**9.74375**	30	**0.25625**	**9.94182**	7	**60**
1	9.68580	23	9.74405	30	0.25595	9.94175	7	59
2	9.68603	22	9.74435	30	0.25565	9.94168	7	58
3	9.68625	23	9.74465	29	0.25535	9.94161	7	57
4	9.68648	23	9.74494	30	0.25506	9.94154	7	56
5	**9.68671**	23	**9.74524**	30	**0.25476**	**9.94147**	7	**55**
6	9.68694	22	9.74554	29	0.25446	9.94140	7	54
7	9.68716	23	9.74583	30	0.25417	9.94133	7	53
8	9.68739	23	9.74613	30	0.25387	9.94126	7	52
9	9.68762	22	9.74643	30	0.25357	9.94119	7	51
10	**9.68784**	23	**9.74673**	29	**0.25327**	**9.94112**	7	**50**
11	9.68807	22	9.74702	30	0.25298	9.94105	7	49
12	9.68829	23	9.74732	30	0.25268	9.94098	8	48
13	9.68852	23	9.74762	29	0.25238	9.94090	7	47
14	9.68875	22	9.74791	30	0.25209	9.94083	7	46
15	**9.68897**	23	**9.74821**	30	**0.25179**	**9.94076**	7	**45**
16	9.68920	22	9.74851	29	0.25149	9.94069	7	44
17	9.68942	23	9.74880	30	0.25120	9.94062	7	43
18	9.68965	22	9.74910	29	0.25090	9.94055	7	42
19	9.68987	23	9.74939	30	0.25061	9.94048	7	41
20	**9.69010**	22	**9.74969**	29	**0.25031**	**9.94041**	7	**40**
21	9.69032	23	9.74998	30	0.25002	9.94034	7	39
22	9.69055	22	9.75028	30	0.24972	9.94027	7	38
23	9.69077	23	9.75058	29	0.24942	9.94020	8	37
24	9.69100	22	9.75087	30	0.24913	9.94012	7	36
25	**9.69122**	22	**9.75117**	29	**0.24883**	**9.94005**	7	**35**
26	9.69144	23	9.75146	30	0.24854	9.93998	7	34
27	9.69167	22	9.75176	29	0.24824	9.93991	7	33
28	9.69189	23	9.75205	30	0.24795	9.93984	7	32
29	9.69212	22	9.75235	29	0.24765	9.93977	7	31
30	**9.69234**	22	**9.75264**	30	**0.24736**	**9.93970**	7	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	30	29
1	0.5	0.5
2	1.0	1.0
3	1.5	1.5
4	2.0	1.9
5	2.5	2.4
6	3.0	2.9
7	3.5	3.4
8	4.0	3.9
9	4.5	4.4
10	5.0	4.8
20	10.0	9.7
30	15.0	14.5
40	20.0	19.3
50	25.0	24.2

	23	22
1	0.4	0.4
2	0.8	0.7
3	1.2	1.1
4	1.5	1.5
5	1.9	1.8
6	2.3	2.2
7	2.7	2.6
8	3.1	2.9
9	3.5	3.3
10	3.8	3.7
20	7.7	7.3
30	11.5	11.0
40	15.3	14.7
50	19.2	18.3

	7	8
10	1.2	1.3
20	2.3	2.7
30	3.5	4.0
40	4.7	5.3
50	5.8	6.7

PP.

60°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.69234**		**9.75264**		**0.24736**	**9.93970**		**30**
		22		30			7	
31	9.69256		9.75294		0.24706	9.93963		29
		23		29			8	
32	9.69279		9.75323		0.24677	9.93955		28
		22		30			7	
33	9.69301		9.75353		0.24647	9.93948		27
		22		29			7	
34	9.69323		9.75382		0.24618	9.93941		26
		22		29			7	
35	**9.69345**		**9.75411**		**0.24589**	**9.93934**		**25**
		23		30			7	
36	9.69368		9.75441		0.24559	9.93927		24
		22		29			7	
37	9.69390		9.75470		0.24530	9.93920		23
		22		30			8	
38	9.69412		9.75500		0.24500	9.93912		22
		22		29			7	
39	9.69434		9.75529		0.24471	9.93905		21
		22		29			7	
40	**9.69456**		**9.75558**		**0.24442**	**9.93898**		**20**
		23		30			7	
41	9.69479		9.75588		0.24412	9.93891		19
		22		29			7	
42	9.69501		9.75617		0.24383	9.93884		18
		22		30			8	
43	9.69523		9.75647		0.24353	9.93876		17
		22		29			7	
44	9.69545		9.75676		0.24324	9.93869		16
		22		29			7	
45	**9.69567**		**9.75705**		**0.24295**	**9.93862**		**15**
		22		30			7	
46	9.69589		9.75735		0.24265	9.93855		14
		22		29			8	
47	9.69611		9.75764		0.24236	9.93847		13
		22		29			7	
48	9.69633		9.75793		0.24207	9.93840		12
		22		29			7	
49	9.69655		9.75822		0.24178	9.93833		11
		22		30			7	
50	**9.69677**		**9.75852**		**0.24148**	**9.93826**		**10**
		22		29			7	
51	9.69699		9.75881		0.24119	9.93819		9
		22		29			8	
52	9.69721		9.75910		0.24090	9.93811		8
		22		29			7	
53	9.69743		9.75939		0.24061	9.93804		7
		22		30			7	
54	9.69765		9.75969		0.24031	9.93797		6
		22		29			8	
55	**9.69787**		**9.75998**		**0.24002**	**9.93789**		**5**
		22		29			7	
56	9.69809		9.76027		0.23973	9.93782		4
		22		29			7	
57	9.69831		9.76056		0.23944	9.93775		3
		22		30			7	
58	9.69853		9.76086		0.23914	9.93768		2
		22		29			8	
59	9.69875		9.76115		0.23885	9.93760		1
		22		29			7	
60	**9.69897**		**9.76144**		**0.23856**	**9.93753**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	30	29
1	0.5	0.5
2	1.0	1.0
3	1.5	1.5
4	2.0	1.9
5	2.5	2.4
6	3.0	2.9
7	3.5	3.4
8	4.0	3.9
9	4.5	4.4
10	5.0	4.8
20	10.0	9.7
30	15.0	14.5
40	20.0	19.3
50	25.0	24.2

	23	22
1	0.4	0.4
2	0.8	0.7
3	1.2	1.1
4	1.5	1.5
5	1.9	1.8
6	2.3	2.2
7	2.7	2.6
8	3.1	2.9
9	3.5	3.3
10	3.8	3.7
20	7.7	7.3
30	11.5	11.0
40	15.3	14.7
50	19.2	18.3

	7	8
10	1.2	1.3
20	2.3	2.7
30	3.5	4.0
40	4.7	5.3
50	5.8	6.7

PP.

30°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.69897**	22	**9.76144**	29	**0.23856**	**9.93753**	7	**60**
1	9.69919	22	9.76173	29	0.23827	9.93746	8	59
2	9.69941	22	9.76202	29	0.23798	9.93738	7	58
3	9.69963	21	9.76231	30	0.23769	9.93731	7	57
4	9.69984	22	9.76261	29	0.23739	9.93724	7	56
5	**9.70006**	22	**9.76290**	29	**0.23710**	**9.93717**	8	**55**
6	9.70028	22	9.76319	29	0.23681	9.93709	7	54
7	9.70050	22	9.76348	29	0.23652	9.93702	7	53
8	9.70072	21	9.76377	29	0.23623	9.93695	8	52
9	9.70093	22	9.76406	29	0.23594	9.93687	7	51
10	**9.70115**	22	**9.76435**	29	**0.23565**	**9.93680**	7	**50**
11	9.70137	22	9.76464	29	0.23536	9.93673	8	49
12	9.70159	21	9.76493	29	0.23507	9.93665	7	48
13	9.70180	22	9.76522	29	0.23478	9.93658	8	47
14	9.70202	22	9.76551	29	0.23449	9.93650	7	46
15	**9.70224**	21	**9.76580**	29	**0.23420**	**9.93643**	7	**45**
16	9.70245	22	9.76609	30	0.23391	9.93636	8	44
17	9.70267	21	9.76639	29	0.23361	9.93628	7	43
18	9.70288	22	9.76668	29	0.23332	9.93621	7	42
19	9.70310	22	9.76697	28	0.23303	9.93614	8	41
20	**9.70332**	21	**9.76725**	29	**0.23275**	**9.93606**	7	**40**
21	9.70353	22	9.76754	29	0.23246	9.93599	8	39
22	9.70375	21	9.76783	29	0.23217	9.93591	7	38
23	9.70396	22	9.76812	29	0.23188	9.93584	7	37
24	9.70418	21	9.76841	29	0.23159	9.93577	8	36
25	**9.70439**	22	**9.76870**	29	**0.23130**	**9.93569**	7	**35**
26	9.70461	21	9.76899	29	0.23101	9.93562	8	34
27	9.70482	22	9.76928	29	0.23072	9.93554	7	33
28	9.70504	21	9.76957	29	0.23043	9.93547	8	32
29	9.70525	22	9.76986	29	0.23014	9.93539	7	31
30	**9.70547**	21	**9.77015**	29	**0.22985**	**9.93532**	7	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	30	29
1	0.5	0.5
2	1.0	1.0
3	1.5	1.5
4	2.0	1.9
5	2.5	2.4
6	3.0	2.9
7	3.5	3.4
8	4.0	3.9
9	4.5	4.4
10	5.0	4.8
20	10.0	9.7
30	15.0	14.5
40	20.0	19.3
50	25.0	24.2

	22	21
1	0.4	0.4
2	0.7	0.7
3	1.1	1.1
4	1.5	1.4
5	1.8	1.8
6	2.2	2.1
7	2.6	2.5
8	2.9	2.8
9	3.3	3.2
10	3.7	3.5
20	7.3	7.0
30	11.0	10.5
40	14.7	14.0
50	18.3	17.5

	7	8
10	1.2	1.3
20	2.3	2.7
30	3.5	4.0
40	4.7	5.3
50	5.8	6.7

PP.

59°

30°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.70547**	21	**9.77015**	29	**0.22985**	**9.93532**	7	**30**
31	9.70568	22	9.77044	29	0.22956	9.93525	8	29
32	9.70590	21	9.77073	28	0.22927	9.93517	7	28
33	9.70611	22	9.77101	29	0.22899	9.93510	8	27
34	9.70633	21	9.77130	29	0.22870	9.93502	7	26
35	**9.70654**	21	**9.77159**	29	**0.22841**	**9.93495**	8	**25**
36	9.70675	22	9.77188	29	0.22812	9.93487	7	24
37	9.70697	21	9.77217	29	0.22783	9.93480	8	23
38	9.70718	21	9.77246	28	0.22754	9.93472	7	22
39	9.70739	22	9.77274	29	0.22726	9.93465	8	21
40	**9.70761**	21	**9.77303**	29	**0.22697**	**9.93457**	7	**20**
41	9.70782	21	9.77332	29	0.22668	9.93450	8	19
42	9.70803	21	9.77361	29	0.22639	9.93442	7	18
43	9.70824	22	9.77390	28	0.22610	9.93435	8	17
44	9.70846	21	9.77418	29	0.22582	9.93427	7	16
45	**9.70867**	21	**9.77447**	29	**0.22553**	**9.93420**	8	**15**
46	9.70888	21	9.77476	29	0.22524	9.93412	7	14
47	9.70909	22	9.77505	28	0.22495	9.93405	8	13
48	9.70931	21	9.77533	29	0.22467	9.93397	7	12
49	9.70952	21	9.77562	29	0.22438	9.93390	8	11
50	**9.70973**	21	**9.77591**	28	**0.22409**	**9.93382**	7	**10**
51	9.70994	21	9.77619	29	0.22381	9.93375	8	9
52	9.71015	21	9.77648	29	0.22352	9.93367	7	8
53	9.71036	22	9.77677	29	0.22323	9.93360	8	7
54	9.71058	21	9.77706	28	0.22294	9.93352	8	6
55	**9.71079**	21	**9.77734**	29	**0.22266**	**9.93344**	7	**5**
56	9.71100	21	9.77763	28	0.22237	9.93337	8	4
57	9.71121	21	9.77791	29	0.22209	9.93329	7	3
58	9.71142	21	9.77820	29	0.22180	9.93322	8	2
59	9.71163	21	9.77849	28	0.22151	9.93314	7	1
60	**9.71184**		**9.77877**		**0.22123**	**9.93307**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	29	28
1	0.5	0.5
2	1.0	0.9
3	1.5	1.4
4	1.9	1.9
5	2.4	2.3
6	2.9	2.8
7	3.4	3.3
8	3.9	3.7
9	4.4	4.2
10	4.8	4.7
20	9.7	9.3
30	14.5	14.0
40	19.3	18.7
50	24.2	23.3

	22	21
1	0.4	0.4
2	0.7	0.7
3	1.1	1.1
4	1.5	1.4
5	1.8	1.8
6	2.2	2.1
7	2.6	2.5
8	2.9	2.8
9	3.3	3.2
10	3.7	3.5
20	7.3	7.0
30	11.0	10.5
40	14.7	14.0
50	18.3	17.5

	7	8
10	1.2	1.3
20	2.3	2.7
30	3.5	4.0
40	4.7	5.3
50	5.8	6.7

PP.

59°

31°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.71184**	21	**9.77877**	29	**0.22123**	**9.93307**	8	**60**
1	9.71205	21	9.77906	29	0.22094	9.93299	8	59
2	9.71226	21	9.77935	28	0.22065	9.93291	7	58
3	9.71247	21	9.77963	29	0.22037	9.93284	8	57
4	9.71268	21	9.77992	28	0.22008	9.93276	7	56
5	**9.71289**	21	**9.78020**	29	**0.21980**	**9.93269**	8	**55**
6	9.71310	21	9.78049	28	0.21951	9.93261	8	54
7	9.71331	21	9.78077	29	0.21923	9.93253	7	53
8	9.71352	21	9.78106	29	0.21894	9.93246	8	52
9	9.71873	20	9.78135	28	0.21865	9.93238	8	51
10	**9.71393**	21	**9.78163**	29	**0.21837**	**9.93230**	7	**50**
11	9.71414	21	9.78192	28	0.21808	9.93223	8	49
12	9.71435	21	9.78220	29	0.21780	9.93215	8	48
13	9.71456	21	9.78249	28	0.21751	9.93207	7	47
14	9.71477	21	9.78277	29	0.21723	9.93200	8	46
15	**9.71498**	21	**9.78306**	28	**0.21694**	**9.93192**	8	**45**
16	9.71519	20	9.78334	29	0.21666	9.93184	7	44
17	9.71539	21	9.78363	28	0.21637	9.93177	8	43
18	9.71560	21	9.78391	28	0.21609	9.93169	8	42
19	9.71581	21	9.78419	29	0.21581	9.93161	7	41
20	**9.71602**	20	**9.78448**	28	**0.21552**	**9.93154**	8	**40**
21	9.71622	21	9.78476	29	0.21524	9.93146	8	39
22	9.71643	21	9.78505	28	0.21495	9.93138	7	38
23	9.71664	21	9.78533	29	0.21467	9.93131	8	37
24	9.71685	20	9.78562	28	0.21438	9.93123	8	36
25	**9.71705**	21	**9.78590**	28	**0.21410**	**9.93115**	7	**35**
26	9.71726	21	9.78618	29	0.21382	9.93108	8	34
27	9.71747	20	9.78647	28	0.21353	9.93100	8	33
28	9.71767	21	9.78675	29	0.21325	9.93092	8	32
29	9.71788	21	9.78704	28	0.21296	9.93084	7	31
30	**9.71809**	20	**9.78732**	28	**0.21268**	**9.93077**	8	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	29	28
1	0.5	0.5
2	1.0	0.9
3	1.5	1.4
4	1.9	1.9
5	2.4	2.3
6	2.9	2.8
7	3.4	3.3
8	3.9	3.7
9	4.4	4.2
10	4.8	4.7
20	9.7	9.3
30	14.5	14.0
40	19.3	18.7
50	24.2	23.3

	21	20
1	0.4	0.3
2	0.7	0.7
3	1.1	1.0
4	1.4	1.3
5	1.8	1.7
6	2.1	2.0
7	2.5	2.3
8	2.8	2.7
9	3.2	3.0
10	3.5	3.3
20	7.0	6.7
30	10.5	10.0
40	14.0	13.3
50	17.5	16.7

	7	8
10	1.2	1.3
20	2.3	2.7
30	3.5	4.0
40	4.7	5.3
50	5.8	6.7

PP.

58°

31°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.71809**	20	**9.78732**	28	**0.21268**	**9.93077**	8	**30**
31	9.71829	21	9.78760	29	0.21240	9.93069	8	29
32	9.71850	20	9.78789	28	0.21211	9.93061	8	28
33	9.71870	21	9.78817	28	0.21183	9.93053	7	27
34	9.71891	20	9.78845	29	0.21155	9.93046	8	26
35	**9.71911**	21	**9.78874**	28	**0.21126**	**9.93038**	8	**25**
36	9.71932	20	9.78902	28	0.21098	9.93030	8	24
37	9.71952	21	9.78930	29	0.21070	9.93022	8	23
38	9.71973	21	9.78959	28	0.21041	9.93014	7	22
39	9.71994	20	9.78987	28	0.21013	9.93007	8	21
40	**9.72014**	20	**9.79015**	28	**0.20985**	**9.92999**	8	**20**
41	9.72034	21	9.79043	29	0.20957	9.92991	8	19
42	9.72055	20	9.79072	28	0.20928	9.92983	7	18
43	9.72075	21	9.79100	28	0.20900	9.92976	8	17
44	9.72096	20	9.79128	28	0.20872	9.92968	8	16
45	**9.72116**	21	**9.79156**	29	**0.20844**	**9.92960**	8	**15**
46	9.72137	20	9.79185	28	0.20815	9.92952	8	14
47	9.72157	20	9.79213	28	0.20787	9.92944	8	13
48	9.72177	21	9.79241	28	0.20759	9.92936	7	12
49	9.72198	20	9.79269	28	0.20731	9.92929	8	11
50	**9.72218**	20	**9.79297**	29	**0.20703**	**9.92921**	8	**10**
51	9.72238	21	9.79326	28	0.20674	9.92913	8	9
52	9.72259	20	9.79354	28	0.20646	9.92905	8	8
53	9.72279	20	9.79382	28	0.20618	9.92897	8	7
54	9.72299	21	9.79410	28	0.20590	9.92889	8	6
55	**9.72320**	20	**9.79438**	28	**0.20562**	**9.92881**	7	**5**
56	9.72340	20	9.79466	29	0.20534	9.92874	8	4
57	9.72360	21	9.79495	28	0.20505	9.92866	8	3
58	9.72381	20	9.79523	28	0.20477	9.92858	8	2
59	9.72401	20	9.79551	28	0.20449	9.92850	8	1
60	**9.72421**		**9.79579**		**0.20421**	**9.92842**		0
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	29	28
1	0.5	0.5
2	1.0	0.9
3	1.5	1.4
4	1.9	1.9
5	2.4	2.3
6	2.9	2.8
7	3.4	3.3
8	3.9	3.7
9	4.4	4.2
10	4.8	4.7
20	9.7	9.3
30	14.5	14.0
40	19.3	18.7
50	24.2	23.3

	21	20
1	0.4	0.3
2	0.7	0.7
3	1.1	1.0
4	1.4	1.3
5	1.8	1.7
6	2.1	2.0
7	2.5	2.3
8	2.8	2.7
9	3.2	3.0
10	3.5	3.3
20	7.0	6.7
30	10.5	10.0
40	14.0	13.3
50	17.5	16.7

	7	8
10	1.2	1.3
20	2.3	2.7
30	3.5	4.0
40	4.7	5.3
50	5.8	6.7

PP.

58°

32°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.72421**	20	**9.79579**	28	**0.20421**	**9.92842**	8	**60**
1	9.72441	20	9.79607	28	0.20393	9.92834	8	59
2	9.72461	21	9.79635	28	0.20365	9.92826	8	58
3	9.72482	20	9.79663	28	0.20337	9.92818	8	57
4	9.72502	20	9.79691	28	0.20309	9.92810	7	56
5	**9.72522**	20	**9.79719**	28	**0.20281**	**9.92803**	8	**55**
6	9.72542	20	9.79747	29	0.20253	9.92795	8	54
7	9.72562	20	9.79776	28	0.20224	9.92787	8	53
8	9.72582	20	9.79804	28	0.20196	9.92779	8	52
9	9.72602	20	9.79832	28	0.20168	9.92771	8	51
10	**9.72622**	21	**9.79860**	28	**0.20140**	**9.92763**	8	**50**
11	9.72643	20	9.79888	28	0.20112	9.92755	8	49
12	9.72663	20	9.79916	28	0.20084	9.92747	8	48
13	9.72683	20	9.79944	28	0.20056	9.92739	8	47
14	9.72703	20	9.79972	28	0.20028	9.92731	8	46
15	**9.72723**	20	**9.80000**	28	**0.20000**	**9.92723**	8	**45**
16	9.72743	20	9.80028	28	0.19972	9.92715	8	44
17	9.72763	20	9.80056	28	0.19944	9.92707	8	43
18	9.72783	20	9.80084	28	0.19916	9.92699	8	42
19	9.72803	20	9.80112	28	0.19888	9.92691	8	41
20	**9.72823**	20	**9.80140**	28	**0.19860**	**9.92683**	8	**40**
21	9.72843	20	9.80168	27	0.19832	9.92675	8	39
22	9.72863	20	9.80195	28	0.19805	9.92667	8	38
23	9.72883	19	9.80223	28	0.19777	9.92659	8	37
24	9.72902	20	9.80251	28	0.19749	9.92651	8	36
25	**9.72922**	20	**9.80279**	28	**0.19721**	**9.92643**	8	**35**
26	9.72942	20	9.80307	28	0.19693	9.92635	8	34
27	9.72962	20	9.80335	28	0.19665	9.92627	8	33
28	9.72982	20	9.80363	28	0.19637	9.92619	8	32
29	9.73002	20	9.80391	28	0.19609	9.92611	8	31
30	**9.73022**	19	**9.80419**	28	**0.19581**	**9.92603**	8	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	29	28
1	0.5	0.5
2	1.0	0.9
3	1.5	1.4
4	1.9	1.9
5	2.4	2.3
6	2.9	2.8
7	3.4	3.3
8	3.9	3.7
9	4.4	4.2
10	4.8	4.7
20	9.7	9.3
30	14.5	14.0
40	19.3	18.7
50	24.2	23.3

	21	20
1	0.4	0.3
2	0.7	0.7
3	1.1	1.0
4	1.4	1.3
5	1.8	1.7
6	2.1	2.0
7	2.5	2.3
8	2.8	2.7
9	3.2	3.0
10	3.5	3.3
20	7.0	6.7
30	10.5	10.0
40	14.0	13.3
50	17.5	16.7

	7	8
10	1.2	1.3
20	2.3	2.7
30	3.5	4.0
40	4.7	5.3
50	5.8	6.7

PP.

57°

32°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.73022**	19	**9.80419**	28	**0.19581**	**9.92603**	8	**30**
31	9.73041	20	9.80447	27	0.19553	9.92595	8	29
32	9.73061	20	9.80474	28	0.19526	9.92587	8	28
33	9.73081	20	9.80502	28	0.19498	9.92579	8	27
34	9.73101	20	9.80530	28	0.19470	9.92571	8	26
35	**9.73121**	19	**9.80558**	28	**0.19442**	**9.92563**	8	**25**
36	9.73140	20	9.80586	28	0.19414	9.92555	9	24
37	9.73160	20	9.80614	28	0.19386	9.92546	8	23
38	9.73180	20	9.80642	27	0.19358	9.92538	8	22
39	9.73200	19	9.80669	28	0.19331	9.92530	8	21
40	**9.73219**	20	**9.80697**	28	**0.19303**	**9.92522**	8	**20**
41	9.73239	20	9.80725	28	0.19275	9.92514	8	19
42	9.73259	19	9.80753	28	0.19247	9.92506	8	18
43	9.73278	20	9.80781	27	0.19219	9.92498	8	17
44	9.73298	20	9.80808	28	0.19192	9.92490	8	16
45	**9.73318**	19	**9.80836**	28	**0.19164**	**9.92482**	9	**15**
46	9.73337	20	9.80864	28	0.19136	9.92473	8	14
47	9.73357	20	9.80892	27	0.19108	9.92465	8	13
48	9.73377	19	9.80919	28	0.19081	9.92457	8	12
49	9.73396	20	9.80947	28	0.19053	9.92449	8	11
50	**9.73416**	19	**9.80975**	28	**0.19025**	**9.92441**	8	**10**
51	9.73435	20	9.81003	27	0.18997	9.92433	8	9
52	9.73455	19	9.81030	28	0.18970	9.92425	9	8
53	9.73474	20	9.81058	28	0.18942	9.92416	8	7
54	9.73494	19	9.81086	27	0.18914	9.92408	8	6
55	**9.73513**	20	**9.81113**	28	**0.18887**	**9.92400**	8	**5**
56	9.73533	19	9.81141	28	0.18859	9.92392	8	4
57	9.73552	20	9.81169	27	0.18831	9.92384	8	3
58	9.73572	19	9.81196	28	0.18804	9.92376	9	2
59	9.73591	20	9.81224	28	0.18776	9.92367	8	1
60	**9.73611**		**9.81252**		**0.18748**	**9.92359**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	28	27
1	0.5	0.5
2	0.9	0.9
3	1.4	1.4
4	1.9	1.8
5	2.3	2.3
6	2.8	2.7
7	3.3	3.2
8	3.7	3.6
9	4.2	4.1
10	4.7	4.5
20	9.3	9.0
30	14.0	13.5
40	18.7	18.0
50	23.3	22.5

	20	19
1	0.3	0.3
2	0.7	0.6
3	1.0	1.0
4	1.3	1.3
5	1.7	1.6
6	2.0	1.9
7	2.3	2.2
8	2.7	2.5
9	3.0	2.9
10	3.3	3.2
20	6.7	6.3
30	10.0	9.5
40	13.3	12.7
50	16.7	15.8

	8	9
10	1.3	1.5
20	2.7	3.0
30	4.0	4.5
40	5.3	6.0
50	6.7	7.5

PP.

57°

33°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.73611**	19	**9.81252**	27	**0.18748**	**9.92359**	8	**60**
1	9.73630	20	9.81279	28	0.18721	9.92351	8	59
2	9.73650	19	9.81307	28	0.18693	9.92343	8	58
3	9.73669	20	9.81335	27	0.18665	9.92335	9	57
4	9.73689	19	9.81362	28	0.18638	9.92326	8	56
5	**9.73708**	19	**9.81390**	28	**0.18610**	**9.92318**	8	**55**
6	9.73727	20	9.81418	27	0.18582	9.92310	8	54
7	9.73747	19	9.81445	28	0.18555	9.92302	9	53
8	9.73766	19	9.81473	27	0.18527	9.92293	8	52
9	9.73785	20	9.81500	28	0.18500	9.92285	8	51
10	**9.73805**	19	**9.81528**	28	**0.18472**	**9.92277**	8	**50**
11	9.73824	19	9.81556	27	0.18444	9.92269	9	49
12	9.73843	20	9.81583	28	0.18417	9.92260	8	48
13	9.73863	19	9.81611	27	0.18389	9.92252	8	47
14	9.73882	19	9.81638	28	0.18362	9.92244	9	46
15	**9.73901**	20	**9.81666**	27	**0.18334**	**9.92235**	8	**45**
16	9.73921	19	9.81693	28	0.18307	9.92227	8	44
17	9.73940	19	9.81721	27	0.18279	9.92219	8	43
18	9.73959	19	9.81748	28	0.18252	9.92211	9	42
19	9.73978	19	9.81776	27	0.18224	9.92202	8	41
20	**9.73997**	20	**9.81803**	28	**0.18197**	**9.92194**	8	**40**
21	9.74017	19	9.81831	27	0.18169	9.92186	9	39
22	9.74036	19	9.81858	28	0.18142	9.92177	8	38
23	9.74055	19	9.81886	27	0.18114	9.92169	8	37
24	9.74074	19	9.81913	28	0.18087	9.92161	9	36
25	**9.74093**	20	**9.81941**	27	**0.18059**	**9.92152**	8	**35**
26	9.74113	19	9.81968	28	0.18032	9.92144	8	34
27	9.74132	19	9.81996	27	0.18004	9.92136	9	33
28	9.74151	19	9.82023	28	0.17977	9.92127	8	32
29	9.74170	19	9.82051	27	0.17949	9.92119	8	31
30	**9.74189**	19	**9.82078**	28	**0.17922**	**9.92111**	9	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	28	27
1	0.5	0.5
2	0.9	0.9
3	1.4	1.4
4	1.9	1.8
5	2.3	2.3
6	2.8	2.7
7	3.3	3.2
8	3.7	3.6
9	4.2	4.1
10	4.7	4.5
20	9.3	9.0
30	14.0	13.5
40	18.7	18.0
50	23.3	22.5

	20	19
1	0.3	0.3
2	0.7	0.6
3	1.0	1.0
4	1.3	1.3
5	1.7	1.6
6	2.0	1.9
7	2.3	2.2
8	2.7	2.5
9	3.0	2.9
10	3.3	3.2
20	6.7	6.3
30	10.0	9.5
40	13.3	12.7
50	16.7	15.8

	8	9
10	1.3	1.5
20	2.7	3.0
30	4.0	4.5
40	5.3	6.0
50	6.7	7.5

PP.

56°

33°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.74189**		**9.82078**		**0.17922**	**9.92111**		**30**
		19		28			9	
31	9.74208		9.82106		0.17894	9.92102		29
		19		27			8	
32	9.74227		9.82133		0.17867	9.92094		28
		19		28			8	
33	9.74246		9.82161		0.17839	9.92086		27
		19		27			9	
34	9.74265		9.82188		0.17812	9.92077		26
		19		27			8	
35	**9.74284**		**9.82215**		**0.17785**	**9.92069**		**25**
		19		28			9	
36	9.74303		9.82243		0.17757	9.92060		24
		19		27			8	
37	9.74322		9.82270		0.17730	9.92052		23
		19		28			8	
38	9.74341		9.82298		0.17702	9.92044		22
		19		27			9	
39	9.74360		9.82325		0.17675	9.92035		21
		19		27			8	
40	**9.74379**		**9.82352**		**0.17648**	**9.92027**		**20**
		19		28			9	
41	9.74398		9.82380		0.17620	9.92018		19
		19		27			8	
42	9.74417		9.82407		0.17593	9.92010		18
		19		28			8	
43	9.74436		9.82435		0.17565	9.92002		17
		19		27			9	
44	9.74455		9.82462		0.17538	9.91993		16
		19		27			8	
45	**9.74474**		**9.82489**		**0.17511**	**9.91985**		**15**
		19		28			9	
46	9.74493		9.82517		0.17483	9.91976		14
		19		27			8	
47	9.74512		9.82544		0.17456	9.91968		13
		19		27			9	
48	9.74531		9.82571		0.17429	9.91959		12
		18		28			8	
49	9.74549		9.82599		0.17401	9.91951		11
		19		27			9	
50	**9.74568**		**9.82626**		**0.17374**	**9.91942**		**10**
		19		27			8	
51	9.74587		9.82653		0.17347	9.91934		9
		19		28			9	
52	9.74606		9.82681		0.17319	9.91925		8
		19		27			8	
53	9.74625		9.82708		0.17292	9.91917		7
		19		27			9	
54	9.74644		9.82735		0.17265	9.91908		6
		18		27			8	
55	**9.74662**		**9.82762**		**0.17238**	**9.91900**		**5**
		19		28			9	
56	9.74681		9.82790		0.17210	9.91891		4
		19		27			8	
57	9.74700		9.82817		0.17183	9.91883		3
		19		27			9	
58	9.74719		9.82844		0.17156	9.91874		2
		18		27			8	
59	9.74737		9.82871		0.17129	9.91866		1
		19		28			9	
60	**9.74756**		**9.82899**		**0.17101**	**9.91857**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds

	28	27
1	0.5	0.5
2	0.9	0.9
3	1.4	1.4
4	1.9	1.8
5	2.3	2.3
6	2.8	2.7
7	3.3	3.2
8	3.7	3.6
9	4.2	4.1
10	4.7	4.5
20	9.3	9.0
30	14.0	13.5
40	18.7	18.0
50	23.3	22.5

	19	18
1	0.3	0.3
2	0.6	0.6
3	1.0	0.9
4	1.3	1.2
5	1.6	1.5
6	1.9	1.8
7	2.2	2.1
8	2.5	2.4
9	2.9	2.7
10	3.2	3.0
20	6.3	6.0
30	9.5	9.0
40	12.7	12.0
50	15.8	15.0

	8	9
10	1.3	1.5
20	2.7	3.0
30	4.0	4.5
40	5.3	6.0
50	6.7	7.5

PP.

56°

34°

Min	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.74756**	19	**9.82899**	27	**0.17101**	**9.91857**	8	**60**
1	9.74775	19	9.82926	27	0.17074	9.91849	9	59
2	9.74794	18	9.82953	27	0.17047	9.91840	8	58
3	9.74812	19	9.82980	28	0.17020	9.91832	9	57
4	9.74831	19	9.83008	27	0.16992	9.91823	8	56
5	**9.74850**	18	**9.83035**	27	**0.16965**	**9.91815**	9	**55**
6	9.74868	19	9.83062	27	0.16938	9.91806	8	54
7	9.74887	19	9.83089	28	0.16911	9.91798	9	53
8	9.74906	18	9.83117	27	0.16883	9.91789	8	52
9	9.74924	19	9.83144	27	0.16856	9.91781	9	51
10	**9.74943**	18	**9.83171**	27	**0.16829**	**9.91772**	9	**50**
11	9.74961	19	9.83198	27	0.16802	9.91763	8	49
12	9.74980	19	9.83225	27	0.16775	9.91755	9	48
13	9.74999	18	9.83252	28	0.16748	9.91746	8	47
14	9.75017	19	9.83280	27	0.16720	9.91738	9	46
15	**9.75036**	18	**9.83307**	27	**0.16693**	**9.91729**	9	**45**
16	9.75054	19	9.83334	27	0.16666	9.91720	8	44
17	9.75073	18	9.83361	27	0.16639	9.91712	9	43
18	9.75091	19	9.83388	27	0.16612	9.91703	8	42
19	9.75110	18	9.83415	27	0.16585	9.91695	9	41
20	**9.75128**	19	**9.83442**	28	**0.16558**	**9.91686**	9	**40**
21	9.75147	18	9.83470	27	0.16530	9.91677	8	39
22	9.75165	19	9.83497	27	0.16503	9.91669	9	38
23	9.75184	18	9.83524	27	0.16476	9.91660	9	37
24	9.75202	19	9.83551	27	0.16449	9.91651	8	36
25	**9.75221**	18	**9.83578**	27	**0.16422**	**9.91643**	9	**35**
26	9.75239	19	9.83605	27	0.16395	9.91634	9	34
27	9.75258	18	9.83632	27	0.16368	9.91625	8	33
28	9.75276	18	9.83659	27	0.16341	9.91617	9	32
29	9.75294	19	9.83686	27	0.16314	9.91608	9	31
30	**9.75313**	18	**9.83713**	27	**0.16287**	**9.91599**	8	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	28	27
1	0.5	0.5
2	0.9	0.9
3	1.4	1.4
4	1.9	1.8
5	2.3	2.3
6	2.8	2.7
7	3.3	3.2
8	3.7	3.6
9	4.2	4.1
10	4.7	4.5
20	9.3	9.0
30	14.0	13.5
40	18.7	18.0
50	23.3	22.5

	19	18
1	0.3	0.3
2	0.6	0.6
3	1.0	0.9
4	1.3	1.2
5	1.6	1.5
6	1.9	1.8
7	2.2	2.1
8	2.5	2.4
9	2.9	2.7
10	3.2	3.0
20	6.3	6.0
30	9.5	9.0
40	12.7	12.0
50	15.8	15.0

	8	9
10	1.3	1.5
20	2.7	3.0
30	4.0	4.5
40	5.3	6.0
50	6.7	7.5

PP.

55°

34°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.75313**		**9.83713**		**0.16287**	**9.91599**		**30**
		18		27			8	
31	9.75331		9.83740		0.16260	9.91591		29
		19		28			9	
32	9.75350		9.83768		0.16232	9.91582		28
		18		27			9	
33	9.75368		9.83795		0.16205	9.91573		27
		18		27			8	
34	9.75386		9.83822		0.16178	9.91565		26
		19		27			9	
35	**9.75405**		**9.83849**		**0.16151**	**9.91556**		**25**
		18		27			9	
36	9.75423		9.83876		0.16124	9.91547		24
		18		27			9	
37	9.75441		9.83903		0.16097	9.91538		23
		18		27			8	
38	9.75459		9.83930		0.16070	9.91530		22
		19		27			9	
39	9.75478		9.83957		0.16043	9.91521		21
		18		27			9	
40	**9.75496**		**9.83984**		**0.16016**	**9.91512**		**20**
		18		27			8	
41	9.75514		9.84011		0.15989	9.91504		19
		19		27			9	
42	9.75533		9.84038		0.15962	9.91495		18
		18		27			9	
43	9.75551		9.84065		0.15935	9.91486		17
		18		27			9	
44	9.75569		9.84092		0.15908	9.91477		16
		18		27			8	
45	**9.75587**		**9.84119**		**0.15881**	**9.91469**		**15**
		18		27			9	
46	9.75605		9.84146		0.15854	9.91460		14
		19		27			9	
47	9.75624		9.84173		0.15827	9.91451		13
		18		27			9	
48	9.75642		9.84200		0.15800	9.91442		12
		18		27			9	
49	9.75660		9.84227		0.15773	9.91433		11
		18		27			8	
50	**9.75678**		**9.84254**		**0.15746**	**9.91425**		**10**
		18		26			9	
51	9.75696		9.84280		0.15720	9.91416		9
		18		27			9	
52	9.75714		9.84307		0.15693	9.91407		8
		19		27			9	
53	9.75733		9.84334		0.15666	9.91398		7
		18		27			9	
54	9.75751		9.84361		0.15639	9.91389		6
		18		27			8	
55	**9.75769**		**9.84388**		**0.15612**	**9.91381**		**5**
		18		27			9	
56	9.75787		9.84415		0.15585	9.91372		4
		18		27			9	
57	9.75805		9.84442		0.15558	9.91363		3
		18		27			9	
58	9.75823		9.84469		0.15531	9.91354		2
		18		27			9	
59	9.75841		9.84496		0.15504	9.91345		1
		18		27			9	
60	**9.75859**		**9.84523**		**0.15477**	**9.91336**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	28	27
1	0.5	0.5
2	0.9	0.9
3	1.4	1.4
4	1.9	1.8
5	2.3	2.3
6	2.8	2.7
7	3.3	3.2
8	3.7	3.6
9	4.2	4.1
10	4.7	4.5
20	9.3	9.0
30	14.0	13.5
40	18.7	18.0
50	23.3	22.5

	26
1	0.4
2	0.9
3	1.3
4	1.7
5	2.2
6	2.6
7	3.0
8	3.5
9	3.9
10	4.3
20	8.7
30	13.0
40	17.3
50	21.7

	19	18
1	0.3	0.3
2	0.6	0.6
3	1.0	0.9
4	1.3	1.2
5	1.6	1.5
6	1.9	1.8
7	2.2	2.1
8	2.5	2.4
9	2.9	2.7
10	3.2	3.0
20	6.3	6.0
30	9.5	9.0
40	12.7	12.0
50	15.8	15.0

	8	9
10	1.3	1.5
20	2.7	3.0
30	4.0	4.5
40	5.3	6.0
50	6.7	7.5

PP.

55°

35°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.75859**	18	**9.84523**	27	**0.15477**	**9.91336**	8	**60**
1	9.75877	18	9.84550	26	0.15450	9.91328	9	59
2	9.75895	18	9.84576	27	0.15424	9.91319	9	58
3	9.75913	18	9.84603	27	0.15397	9.91310	9	57
4	9.75931	18	9.84630	27	0.15370	9.91301	9	56
5	**9.75949**	18	**9.84657**	27	**0.15343**	**9.91292**	9	**55**
6	9.75967	18	9.84684	27	0.15316	9.91283	9	54
7	9.75985	18	9.84711	27	0.15289	9.91274	8	53
8	9.76003	18	9.84738	26	0.15262	9.91266	9	52
9	9.76021	18	9.84764	27	0.15236	9.91257	9	51
10	**9.76039**	18	**9.84791**	27	**0.15209**	**9.91248**	9	**50**
11	9.76057	18	9.84818	27	0.15182	9.91239	9	49
12	9.76075	18	9.84845	27	0.15155	9.91230	9	48
13	9.76093	18	9.84872	27	0.15128	9.91221	9	47
14	9.76111	18	9.84899	26	0.15101	9.91212	9	46
15	**9.76129**	17	**9.84925**	27	**0.15075**	**9.91203**	9	**45**
16	9.76146	18	9.84952	27	0.15048	9.91194	9	44
17	9.76164	18	9.84979	27	0.15021	9.91185	9	43
18	9.76182	18	9.85006	27	0.14994	9.91176	9	42
19	9.76200	18	9.85033	26	0.14967	9.91167	9	41
20	**9.76218**	18	**9.85059**	27	**0.14941**	**9.91158**	9	**40**
21	9.76236	17	9.85086	27	0.14914	9.91149	8	39
22	9.76253	18	9.85113	27	0.14887	9.91141	9	38
23	9.76271	18	9.85140	26	0.14860	9.91132	9	37
24	9.76289	18	9.85166	27	0.14834	9.91123	9	36
25	**9.76307**	17	**9.85193**	27	**0.14807**	**9.91114**	9	**35**
26	9.76324	18	9.85220	27	0.14780	9.91105	9	34
27	9.76342	18	9.85247	26	0.14753	9.91096	9	33
28	9.76360	18	9.85273	27	0.14727	9.91087	9	32
29	9.76378	17	9.85300	27	0.14700	9.91078	9	31
30	**9.76395**	18	**9.85327**	27	**0.14673**	**9.91069**	9	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	27	26
1	0.5	0.4
2	0.9	0.9
3	1.4	1.3
4	1.8	1.7
5	2.3	2.2
6	2.7	2.6
7	3.2	3.0
8	3.6	3.5
9	4.1	3.9
10	4.5	4.3
20	9.0	8.7
30	13.5	13.0
40	18.0	17.3
50	22.5	21.7

	18	17
1	0.3	0.3
2	0.6	0.6
3	0.9	0.9
4	1.2	1.1
5	1.5	1.4
6	1.8	1.7
7	2.1	2.0
8	2.4	2.3
9	2.7	2.6
10	3.0	2.8
20	6.0	5.7
30	9.0	8.5
40	12.0	11.3
50	15.0	14.2

	8	9
10	1.3	1.5
20	2.7	3.0
30	4.0	4.5
40	5.3	6.0
50	6.7	7.5

PP.

54°

35°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.76395**	18	**9.85327**	27	**0.14673**	**9.91069**	9	**30**
31	9.76413	18	9.85354	26	0.14646	9.91060	9	29
32	9.76431	17	9.85380	27	0.14620	9.91051	9	28
33	9.76448	18	9.85407	27	0.14593	9.91042	9	27
34	9.76466	18	9.85434	26	0.14566	9.91033	10	26
35	**9.76484**	17	**9.85460**	27	**0.14540**	**9.91023**	9	**25**
36	9.76501	18	9.85487	27	0.14513	9.91014	9	24
37	9.76519	18	9.85514	26	0.14486	9.91005	9	23
38	9.76537	17	9.85540	27	0.14460	9.90996	9	22
39	9.76554	18	9.85567	27	0.14433	9.90987	9	21
40	**9.76572**	18	**9.85594**	26	**0.14406**	**9.90978**	9	**20**
41	9.76590	17	9.85620	27	0.14380	9.90969	9	19
42	9.76607	18	9.85647	27	0.14353	9.90960	9	18
43	9.76625	17	9.85674	26	0.14326	9.90951	9	17
44	9.76642	18	9.85700	27	0.14300	9.90942	9	16
45	**9.76660**	17	**9.85727**	27	**0.14273**	**9.90933**	9	**15**
46	9.76677	18	9.85754	26	0.14246	9.90924	9	14
47	9.76695	17	9.85780	27	0.14220	9.90915	9	13
48	9.76712	18	9.85807	27	0.14193	9.90906	10	12
49	9.76730	17	9.85834	26	0.14166	9.90896	9	11
50	**9.76747**	18	**9.85860**	27	**0.14140**	**9.90887**	9	**10**
51	9.76765	17	9.85887	26	0.14113	9.90878	9	9
52	9.76782	18	9.85913	27	0.14087	9.90869	9	8
53	9.76800	17	9.85940	27	0.14060	9.90860	9	7
54	9.76817	18	9.85967	26	0.14033	9.90851	9	6
55	**9.76835**	17	**9.85993**	27	**0.14007**	**9.90842**	10	**5**
56	9.76852	18	9.86020	26	0.13980	9.90832	9	4
57	9.76870	17	9.86046	27	0.13954	9.90823	9	3
58	9.76887	17	9.86073	27	0.13927	9.90814	9	2
59	9.76904	18	9.86100	26	0.13900	9.90805	9	1
60	**9.76922**		**9.86126**		**0.13874**	**9.90796**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	27	26
1	0.5	0.4
2	0.9	0.9
3	1.4	1.3
4	1.8	1.7
5	2.3	2.2
6	2.7	2.6
7	3.2	3.0
8	3.6	3.5
9	4.1	3.9
10	4.5	4.3
20	9.0	8.7
30	13.5	13.0
40	18.0	17.3
50	22.5	21.7

	18	17
1	0.3	0.3
2	0.6	0.6
3	0.9	0.9
4	1.2	1.1
5	1.5	1.4
6	1.8	1.7
7	2.1	2.0
8	2.4	2.3
9	2.7	2.6
10	3.0	2.8
20	6.0	5.7
30	9.0	8.5
40	12.0	11.3
50	15.0	14.2

	9	10
10	1.5	1.7
20	3.0	3.3
30	4.5	5.0
40	6.0	6.7
50	7.5	8.3

PP.

54°

36°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.76922**	17	**9.86126**	27	**0.13874**	**9.90796**	9	**60**
1	9.76939	18	9.86153	26	0.13847	9.90787	10	59
2	9.76957	17	9.86179	27	0.13821	9.90777	9	58
3	9.76974	17	9.86206	26	0.13794	9.90768	9	57
4	9.76991	18	9.86232	27	0.13768	9.90759	9	56
5	**9.77009**	17	**9.86259**	26	**0.13741**	**9.90750**	9	**55**
6	9.77026	17	9.86285	27	0.13715	9.90741	10	54
7	9.77043	18	9.86312	26	0.13688	9.90731	9	53
8	9.77061	17	9.86338	27	0.13662	9.90722	9	52
9	9.77078	17	9.86365	27	0.13635	9.90713	9	51
10	**9.77095**	17	**9.86392**	26	**0.13608**	**9.90704**	10	**50**
11	9.77112	18	9.86418	27	0.13582	9.90694	9	49
12	9.77130	17	9.86445	26	0.13555	9.90685	9	48
13	9.77147	17	9.86471	27	0.13529	9.90676	9	47
14	9.77164	17	9.86498	26	0.13502	9.90667	10	46
15	**9.77181**	18	**9.86524**	27	**0.13476**	**9.90657**	9	**45**
16	9.77199	17	9.86551	26	0.13449	9.90648	9	44
17	9.77216	17	9.86577	26	0.13423	9.90639	9	43
18	9.77233	17	9.86603	27	0.13397	9.90630	10	42
19	9.77250	18	9.86630	26	0.13370	9.90620	9	41
20	**9.77268**	17	**9.86656**	27	**0.13344**	**9.90611**	9	**40**
21	9.77285	17	9.86683	26	0.13317	9.90602	10	39
22	9.77302	17	9.86709	27	0.13291	9.90592	9	38
23	9.77319	17	9.86736	26	0.13264	9.90583	9	37
24	9.77336	17	9.86762	27	0.13238	9.90574	9	36
25	**9.77353**	17	**9.86789**	26	**0.13211**	**9.90565**	10	**35**
26	9.77370	17	9.86815	27	0.13185	9.90555	9	34
27	9.77387	18	9.86842	26	0.13158	9.90546	9	33
28	9.77405	17	9.86868	26	0.13132	9.90537	10	32
29	9.77422	17	9.86894	27	0.13106	9.90527	9	31
30	**9.77439**	17	**9.86921**	26	**0.13079**	**9.90518**	9	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	27	26
1	0.5	0.4
2	0.9	0.9
3	1.4	1.3
4	1.8	1.7
5	2.3	2.2
6	2.7	2.6
7	3.2	3.0
8	3.6	3.5
9	4.1	3.9
10	4.5	4.3
20	9.0	8.7
30	13.5	13.0
40	18.0	17.3
50	22.5	21.7

	18	17
1	0.3	0.3
2	0.6	0.6
3	0.9	0.9
4	1.2	1.1
5	1.5	1.4
6	1.8	1.7
7	2.1	2.0
8	2.4	2.3
9	2.7	2.6
10	3.0	2.8
20	6.0	5.7
30	9.0	8.5
40	12.0	11.3
50	15.0	14.2

	9	10
10	1.5	1.7
20	3.0	3.3
30	4.5	5.0
40	6.0	6.7
50	7.5	8.3

PP.

53°

36°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.77439**	17	**9.86921**	26	**0.13079**	**9.90518**	9	**30**
31	9.77456	17	9.86947	27	0.13053	9.90509	10	29
32	9.77473	17	9.86974	26	0.13026	9.90499	9	28
33	9.77490	17	9.87000	27	0.13000	9.90490	10	27
34	9.77507	17	9.87027	26	0.12973	9.90480	9	26
35	**9.77524**	17	**9.87053**	26	**0.12947**	**9.90471**	9	**25**
36	9.77541	17	9.87079	27	0.12921	9.90462	10	24
37	9.77558	17	9.87106	26	0.12894	9.90452	9	23
38	9.77575	17	9.87132	26	0.12868	9.90443	9	22
39	9.77592	17	9.87158	27	0.12842	9.90434	10	21
40	**9.77609**	17	**9.87185**	26	**0.12815**	**9.90424**	9	**20**
41	9.77626	17	9.87211	27	0.12789	9.90415	10	19
42	9.77643	17	9.87238	26	0.12762	9.90405	9	18
43	9.77660	17	9.87264	26	0.12736	9.90396	10	17
44	9.77677	17	9.87290	27	0.12710	9.90386	9	16
45	**9.77694**	17	**9.87317**	26	**0.12683**	**9.90377**	9	**15**
46	9.77711	17	9.87343	26	0.12657	9.90368	10	14
47	9.77728	16	9.87369	27	0.12631	9.90358	9	13
48	9.77744	17	9.87396	26	0.12604	9.90349	10	12
49	9.77761	17	9.87422	26	0.12578	9.90339	9	11
50	**9.77778**	17	**9.87448**	27	**0.12552**	**9.90330**	10	**10**
51	9.77795	17	9.87475	26	0.12525	9.90320	9	9
52	9.77812	17	9.87501	26	0.12499	9.90311	10	8
53	9.77829	17	9.87527	27	0.12473	9.90301	9	7
54	9.77846	16	9.87554	26	0.12446	9.90292	10	6
55	**9.77862**	17	**9.87580**	26	**0.12420**	**9.90282**	9	**5**
56	9.77879	17	9.87606	27	0.12394	9.90273	10	4
57	9.77896	17	9.87633	26	0.12367	9.90263	9	3
58	9.77913	17	9.87659	26	0.12341	9.90254	10	2
59	9.77930	16	9.87685	26	0.12315	9.90244	9	1
60	**9.77946**	17	**9.87711**	27	**0.12289**	**9.90235**	10	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	27	26
1	0.5	0.4
2	0.9	0.9
3	1.4	1.3
4	1.8	1.7
5	2.3	2.2
6	2.7	2.6
7	3.2	3.0
8	3.6	3.5
9	4.1	3.9
10	4.5	4.3
20	9.0	8.7
30	13.5	13.0
40	18.0	17.3
50	22.5	21.7

	17	16
1	0.3	0.3
2	0.6	0.5
3	0.9	0.8
4	1.1	1.1
5	1.4	1.3
6	1.7	1.6
7	2.0	1.9
8	2.3	2.1
9	2.6	2.4
10	2.8	2.7
20	5.7	5.3
30	8.5	8.0
40	11.3	10.7
50	14.2	13.3

	9	10
10	1.5	1.7
20	3.0	3.3
30	4.5	5.0
40	6.0	6.7
50	7.5	8.3

PP.

53°

37°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	Min.
0	9.77946	17	9.87711	27	0.12289	9.90235	10	60
1	9.77963	17	9.87738	26	0.12262	9.90225	9	59
2	9.77980	17	9.87764	26	0.12236	9.90216	10	58
3	9.77997	16	9.87790	27	0.12210	9.90206	9	57
4	9.78013	17	9.87817	26	0.12183	9.90197	10	56
5	9.78030	17	9.87843	26	0.12157	9.90187	9	55
6	9.78047	16	9.87869	26	0.12131	9.90178	10	54
7	9.78063	17	9.87895	27	0.12105	9.90168	9	53
8	9.78080	17	9.87922	26	0.12078	9.90159	10	52
9	9.78097	16	9.87948	26	0.12052	9.90149	10	51
10	9.78113	17	9.87974	26	0.12026	9.90139	9	50
11	9.78130	17	9.88000	27	0.12000	9.90130	10	49
12	9.78147	16	9.88027	26	0.11973	9.90120	9	48
13	9.78163	17	9.88053	26	0.11947	9.90111	10	47
14	9.78180	17	9.88079	26	0.11921	9.90101	10	46
15	9.78197	16	9.88105	26	0.11895	9.90091	9	45
16	9.78213	17	9.88131	27	0.11869	9.90082	10	44
17	9.78230	16	9.88158	26	0.11842	9.90072	9	43
18	9.78246	17	9.88184	26	0.11816	9.90063	10	42
19	9.78263	17	9.88210	26	0.11790	9.90053	10	41
20	9.78280	16	9.88236	26	0.11764	9.90043	9	40
21	9.78296	17	9.88262	27	0.11738	9.90034	10	39
22	9.78313	16	9.88289	26	0.11711	9.90024	10	38
23	9.78329	17	9.88315	26	0.11685	9.90014	9	37
24	9.78346	16	9.88341	26	0.11659	9.90005	10	36
25	9.78362	17	9.88367	26	0.11633	9.89995	10	35
26	9.78379	16	9.88393	27	0.11607	9.89985	9	34
27	9.78395	17	9.88420	26	0.11580	9.89976	10	33
28	9.78412	16	9.88446	26	0.11554	9.89966	10	32
29	9.78428	17	9.88472	26	0.11528	9.89956	9	31
30	9.78445	16	9.88498	26	0.11502	9.89947	10	30
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	27	26
1	0.5	0.4
2	0.9	0.9
3	1.4	1.3
4	1.8	1.7
5	2.3	2.2
6	2.7	2.6
7	3.2	3.0
8	3.6	3.5
9	4.1	3.9
10	4.5	4.3
20	9.0	8.7
30	13.5	13.0
40	18.0	17.3
50	22.5	21 7

	17	16
1	0.3	0.3
2	0.6	0.5
3	0.9	0.8
4	1.1	1.1
5	1.4	1.3
6	1.7	1.6
7	2.0	1.9
8	2.3	2.1
9	2.6	2.4
10	2.8	2.7
20	5.7	5.3
30	8.5	8.0
40	11.3	10.7
50	14.2	13.3

	9	10
10	1.5	1.7
20	3.0	3.3
30	4.5	5.0
40	6.0	6.7
50	7.5	8.3

PP.

52°

37°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.78445**		**9.88498**		**0.11502**	**9.89947**		**30**
		16		26			10	
31	9.78461		9.88524		0.11476	9.89937		29
		17		26			10	
32	9.78478		9.88550		0.11450	9.89927		28
		16		27			9	
33	9.78494		9.88577		0.11423	9.89918		27
		16		26			10	
34	9.78510		9.88603		0.11397	9.89908		26
		17		26			10	
35	**9.78527**		**9.88629**		**0.11371**	**9.89898**		**25**
		16		26			10	
36	9.78543		9.88655		0.11345	9.89888		24
		17		26			9	
37	9.78560		9.88681		0.11319	9.89879		23
		16		26			10	
38	9.78576		9.88707		0.11293	9.89869		22
		16		26			10	
39	9.78592		9.88733		0.11267	9.89859		21
		17		26			10	
40	**9.78609**		**9.88759**		**0.11241**	**9.89849**		**20**
		16		27			9	
41	9.78625		9.88786		0.11214	9.89840		19
		17		26			10	
42	9.78642		9.88812		0.11188	9.89830		18
		16		26			10	
43	9.78658		9.88838		0.11162	9.89820		17
		16		26			10	
44	9.78674		9.88864		0.11136	9.89810		16
		17		26			9	
45	**9.78691**		**9.88890**		**0.11110**	**9.89801**		**15**
		16		26			10	
46	9.78707		9.88916		0.11084	9.89791		14
		16		26			10	
47	9.78723		9.88942		0.11058	9.89781		13
		16		26			10	
48	9.78739		9.88968		0.11032	9.89771		12
		17		26			10	
49	9.78756		9.88994		0.11006	9.89761		11
		16		26			9	
50	**9.78772**		**9.89020**		**0.10980**	**9.89752**		**10**
		16		26			10	
51	9.78788		9.89046		0.10954	9.89742		9
		17		27			10	
52	9.78805		9.89073		0.10927	9.89732		8
		16		26			10	
53	9.78821		9.89099		0.10901	9.89722		7
		16		26			10	
54	9.78837		9.89125		0.10875	9.89712		6
		16		26			10	
55	**9.78853**		**9.89151**		**0.10849**	**9.89702**		**5**
		16		26			9	
56	9.78869		9.89177		0.10823	9.89693		4
		17		26			10	
57	9.78886		9.89203		0.10797	9.89683		3
		16		26			10	
58	9.78902		9.89229		0.10771	9.89673		2
		16		26			10	
59	9.78918		9.89255		0.10745	9.89663		1
		16		26			10	
60	**9.78934**		**9.89281**		**0.10719**	**9.89653**		**0**
		16		26			10	
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	27	26
1	0.5	0.4
2	0.9	0.9
3	1.4	1.3
4	1.8	1.7
5	2.3	2.2
6	2.7	2.6
7	3.2	3.0
8	3.6	3.5
9	4.1	3.9
10	4.5	4.3
20	9.0	8.7
30	13.5	13.0
40	18.0	17.3
50	22.5	21.7

	17	16
1	0.3	0.3
2	0.6	0.5
3	0.9	0.8
4	1.1	1.1
5	1.4	1.3
6	1.7	1.6
7	2.0	1.9
8	2.3	2.1
9	2.6	2.4
10	2.8	2.7
20	5.7	5.3
30	8.5	8.0
40	11.3	10.7
50	14.2	13.3

	9	10
10	1.5	1.7
20	3.0	3.3
30	4.5	5.0
40	6.0	6.7
50	7.5	8.3

PP.

52°

38°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.78934**	16	**9.89281**	26	**0.10719**	**9.89653**	10	**60**
1	9.78950	17	9.89307	26	0.10693	9.89643	10	59
2	9.78967	16	9.89333	26	0.10667	9.89633	9	58
3	9.78983	16	9.89359	26	0.10641	9.89624	10	57
4	9.78999	16	9.89385	26	0.10615	9.89614	10	56
5	**9.79015**	16	**9.89411**	26	**0.10589**	**9.89604**	10	**55**
6	9.79031	16	9.89437	26	0.10563	9.89594	10	54
7	9.79047	16	9.89463	26	0.10537	9.89584	10	53
8	9.79063	16	9.89489	26	0.10511	9.89574	10	52
9	9.79079	16	9.89515	26	0.10485	9.89564	10	51
10	**9.79095**	16	**9.89541**	26	**0.10459**	**9.89554**	10	**50**
11	9.79111	17	9.89567	26	0.10433	9.89544	10	49
12	9.79128	16	9.89593	26	0.10407	9.89534	10	48
13	9.79144	16	9.89619	26	0.10381	9.89524	10	47
14	9.79160	16	9.89645	26	0.10355	9.89514	10	46
15	**9.79176**	16	**9.89671**	26	**0.10329**	**9.89504**	9	**45**
16	9.79192	16	9.89697	26	0.10303	9.89495	10	44
17	9.79208	16	9.89723	26	0.10277	9.89485	10	43
18	9.79224	16	9.89749	26	0.10251	9.89475	10	42
19	9.79240	16	9.89775	26	0.10225	9.89465	10	41
20	**9.79256**	16	**9.89801**	26	**0.10199**	**9.89455**	10	**40**
21	9.79272	16	9.89827	26	0.10173	9.89445	10	39
22	9.79288	16	9.89853	26	0.10147	9.89435	10	38
23	9.79304	15	9.89879	26	0.10121	9.89425	10	37
24	9.79319	16	9.89905	26	0.10095	9.89415	10	36
25	**9.79335**	16	**9.89931**	26	**0.10069**	**9.89405**	10	**35**
26	9.79351	16	9.89957	26	0.10043	9.89395	10	34
27	9.79367	16	9.89983	26	0.10017	9.89385	10	33
28	9.79383	16	9.90009	26	0.09991	9.89375	11	32
29	9.79399	16	9.90035	26	0.09965	9.89364	10	31
30	**9.79415**	16	**9.90061**	25	**0.09939**	**9.89354**	10	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	17	16
1	0.3	0.3
2	0.6	0.5
3	0.9	0.8
4	1.1	1.1
5	1.4	1.3
6	1.7	1.6
7	2.0	1.9
8	2.3	2.1
9	2.6	2.4
10	2.8	2.7
20	5.7	5.3
30	8.5	8.0
40	11.3	10.7
50	14.2	13.3

	9	10
10	1.5	1.7
20	3.0	3.3
30	4.5	5.0
40	6.0	6.7
50	7.5	8.3

PP.

51°

38°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.79415**	16	**9.90061**	25	**0.09939**	**9.89354**	10	**30**
31	9.79431	16	9.90086	26	0.09914	9.89344	10	29
32	9.79447	16	9.90112	26	0.09888	9.89334	10	28
33	9.79463	15	9.90138	26	0.09862	9.89324	10	27
34	9.79478	16	9.90164	26	0.09836	9.89314	10	26
35	**9.79494**	16	**9.90190**	26	**0.09810**	**9.89304**	10	**25**
36	9.79510	16	9.90216	26	0.09784	9.89294	10	24
37	9.79526	16	9.90242	26	0.09758	9.89284	10	23
38	9.79542	16	9.90268	26	0.09732	9.89274	10	22
39	9.79558	15	9.90294	26	0.09706	9.89264	10	21
40	**9.79573**	16	**9.90320**	26	**0.09680**	**9.89254**	10	**20**
41	9.79589	16	9.90346	25	0.09654	9.89244	11	19
42	9.79605	16	9.90371	26	0.09629	9.89233	10	18
43	9.79621	15	9.90397	26	0.09603	9.89223	10	17
44	9.79636	16	9.90423	26	0.09577	9.89213	10	16
45	**9.79652**	16	**9.90449**	26	**0.09551**	**9.89203**	10	**15**
46	9.79668	16	9.90475	26	0.09525	9.89193	10	14
47	9.79684	15	9.90501	26	0.09499	9.89183	10	13
48	9.79699	16	9.90527	26	0.09473	9.89173	11	12
49	9.79715	16	9.90553	25	0.09447	9.89162	10	11
50	**9.79731**	15	**9.90578**	26	**0.09422**	**9.89152**	10	**10**
51	9.79746	16	9.90604	26	0.09396	9.89142	10	9
52	9.79762	16	9.90630	26	0.09370	9.89132	10	8
53	9.79778	15	9.90656	26	0.09344	9.89122	10	7
54	9.79793	16	9.90682	26	0.09318	9.89112	11	6
55	**9.79809**	16	**9.90708**	26	**0.09292**	**9.89101**	10	**5**
56	9.79825	15	9.90734	25	0.09266	9.89091	10	4
57	9.79840	16	9.90759	26	0.09241	9.89081	10	3
58	9.79856	16	9.90785	26	0.09215	9.89071	11	2
59	9.79872	15	9.90811	26	0.09189	9.89060	10	1
60	**9.79887**	16	**9.90837**	26	**0.09163**	**9.89050**	10	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	16	15
1	0.3	0.3
2	0.5	0.5
3	0.8	0.8
4	1.1	1.0
5	1.3	1.3
6	1.6	1.5
7	1.9	1.8
8	2.1	2.0
9	2.4	2.3
10	2.7	2.5
20	5.3	5.0
30	8.0	7.5
40	10.7	10.0
50	13.3	12.5

	10	11
1	0.2	0.2
2	0.3	0.4
3	0.5	0.6
4	0.7	0.7
5	0.8	0.9
6	1.0	1.1
7	1.2	1.3
8	1.3	1.5
9	1.5	1.7
10	1.7	1.8
20	3.3	3.7
30	5.0	5.5
40	6.7	7.3
50	8.3	9.2

PP.

51°

39°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.79887**	16	**9.90837**	26	**0.09163**	**9.89050**	10	**60**
1	9.79903	15	9.90863	26	0.09137	9.89040	10	59
2	9.79918	16	9.90889	25	0.09111	9.89030	10	58
3	9.79934	16	9.90914	26	0.09086	9.89020	11	57
4	9.79950	15	9.90940	26	0.09060	9.89009	10	56
5	**9.79965**	16	**9.90966**	26	**0.09034**	**9.88999**	10	**55**
6	9.79981	15	9.90992	26	0.09008	9.88989	11	54
7	9.79996	16	9.91018	25	0.08982	9.88978	10	53
8	9.80012	15	9.91043	26	0.08957	9.88968	10	52
9	9.80027	16	9.91069	26	0.08931	9.88958	10	51
10	**9.80043**	15	**9.91095**	26	**0.08905**	**9.88948**	11	**50**
11	9.80058	16	9.91121	26	0.08879	9.88937	10	49
12	9.80074	15	9.91147	25	0.08853	9.88927	10	48
13	9.80089	16	9.91172	26	0.08828	9.88917	11	47
14	9.80105	15	9.91198	26	0.08802	9.88906	10	46
15	**9.80120**	16	**9.91224**	26	**0.08776**	**9.88896**	10	**45**
16	9.80136	15	9.91250	26	0.08750	9.88886	11	44
17	9.80151	15	9.91276	25	0.08724	9.88875	10	43
18	9.80166	16	9.91301	26	0.08699	9.88865	10	42
19	9.80182	15	9.91327	26	0.08673	9.88855	11	41
20	**9.80197**	16	**9.91353**	26	**0.08647**	**9.88844**	10	**40**
21	9.80213	15	9.91379	25	0.08621	9.88834	10	39
22	9.80228	16	9.91404	26	0.08596	9.88824	11	38
23	9.80244	15	9.91430	26	0.08570	9.88813	10	37
24	9.80259	15	9.91456	26	0.08544	9.88803	10	36
25	**9.80274**	16	**9.91482**	25	**0.08518**	**9.88793**	11	**35**
26	9.80290	15	9.91507	26	0.08493	9.88782	10	34
27	9.80305	15	9.91533	26	0.08467	9.88772	11	33
28	9.80320	16	9.91559	26	0.08441	9.88761	10	32
29	9.80336	15	9.91585	25	0.08415	9.88751	10	31
30	**9.80351**	15	**9.91610**	26	**0.08390**	**9.88741**	11	**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	16	15
1	0.3	0.3
2	0.5	0.5
3	0.8	0.8
4	1.1	1.0
5	1.3	1.3
6	1.6	1.5
7	1.9	1.8
8	2.1	2.0
9	2.4	2.3
10	2.7	2.5
20	5.3	5.0
30	8.0	7.5
40	10.7	10.0
50	13.3	12.5

	10	11
1	0.2	0.2
2	0.3	0.4
3	0.5	0.6
4	0.7	0.7
5	0.8	0.9
6	1.0	1.1
7	1.2	1.3
8	1.3	1.5
9	1.5	1.7
10	1.7	1.8
20	3.3	3.7
30	5.0	5.5
40	6.7	7.3
50	8.3	9.2

PP.

50°

39°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.80351**	15	**9.91610**	26	**0.08390**	**9.88741**	11	**30**
31	9.80366	16	9.91636	26	0.08364	9.88730	10	29
32	9.80382	15	9.91662	26	0.08338	9.88720	11	28
33	9.80397	15	9.91688	25	0.08312	9.88709	10	27
34	9.80412	16	9.91713	26	0.08287	9.88699	11	26
35	**9.80428**	15	**9.91739**	26	**0.08261**	**9.88688**	10	**25**
36	9.80443	15	9.91765	26	0.08235	9.88678	10	24
37	9.80458	15	9.91791	25	0.08209	9.88668	11	23
38	9.80473	16	9.91816	26	0.08184	9.88657	10	22
39	9.80489	15	9.91842	26	0.08158	9.88647	11	21
40	**9.80504**	15	**9.91868**	25	**0.08132**	**9.88636**	10	**20**
41	9.80519	15	9.91893	26	0.08107	9.88626	11	19
42	9.80534	16	9.91919	26	0.08081	9.88615	10	18
43	9.80550	15	9.91945	26	0.08055	9.88605	11	17
44	9.80565	15	9.91971	25	0.08029	9.88594	10	16
45	**9.80580**	15	**9.91996**	26	**0.08004**	**9.88584**	11	**15**
46	9.80595	15	9.92022	26	0.07978	9.88573	10	14
47	9.80610	15	9.92048	25	0.07952	9.88563	11	13
48	9.80625	16	9.92073	26	0.07927	9.88552	10	12
49	9.80641	15	9.92099	26	0.07901	9.88542	11	11
50	**9.80656**	15	**9.92125**	25	**0.07875**	**9.88531**	10	**10**
51	9.80671	15	9.92150	26	0.07850	9.88521	11	9
52	9.80686	15	9.92176	26	0.07824	9.88510	11	8
53	9.80701	15	9.92202	25	0.07798	9.88499	10	7
54	9.80716	15	9.92227	26	0.07773	9.88489	11	6
55	**9.80731**	15	**9.92253**	26	**0.07747**	**9.88478**	10	**5**
56	9.80746	16	9.92279	25	0.07721	9.88468	11	4
57	9.80762	15	9.92304	26	0.07696	9.88457	10	3
58	9.80777	15	9.92330	26	0.07670	9.88447	11	2
59	9.80792	15	9.92356	25	0.07644	9.88436	11	1
60	**9.80807**	15	**9.92381**	26	**0.07619**	**9.88425**	10	**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	16	15
1	0.3	0.3
2	0.5	0.5
3	0.8	0.8
4	1.1	1.0
5	1.3	1.3
6	1.6	1.5
7	1.9	1.8
8	2.1	2.0
9	2.4	2.3
10	2.7	2.5
20	5.3	5.0
30	8.0	7.5
40	10.7	10.0
50	13.3	12.5

	10	11
1	0.2	0.2
2	0.3	0.4
3	0.5	0.6
4	0.7	0.7
5	0.8	0.9
6	1.0	1.1
7	1.2	1.3
8	1.3	1.5
9	1.5	1.7
10	1.7	1.8
20	3.3	3.7
30	5.0	5.5
40	6.7	7.3
50	8.3	9.2

PP.

50°

40°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.80807**	15	**9.92381**	26	**0.07619**	**9.88425**	10	**60**
1	9.80822	15	9.92407	26	0.07593	9.88415	11	59
2	9.80837	15	9.92433	25	0.07567	9.88404	10	58
3	9.80852	15	9.92458	26	0.07542	9.88394	11	57
4	9.80867	15	9.92484	26	0.07516	9.88383	11	56
5	**9.80882**	15	**9.92510**	25	**0.07490**	**9.88372**	10	**55**
6	9.80897	15	9.92535	26	0.07465	9.88362	11	54
7	9.80912	15	9.92561	26	0.07439	9.88351	11	53
8	9.80927	15	9.92587	25	0.07413	9.88340	10	52
9	9.80942	15	9.92612	26	0.07388	9.88330	11	51
10	**9.80957**	15	**9.92638**	25	**0.07362**	**9.88319**	11	**50**
11	9.80972	15	9.92663	26	0.07337	9.88308	10	49
12	9.80987	15	9.92689	26	0.07311	9.88298	11	48
13	9.81002	15	9.92715	25	0.07285	9.88287	11	47
14	9.81017	15	9.92740	26	0.07260	9.88276	10	46
15	**9.81032**	15	**9.92766**	26	**0.07234**	**9.88266**	11	**45**
16	9.81047	14	9.92792	25	0.07208	9.88255	11	44
17	9.81061	15	9.92817	26	0.07183	9.88244	10	43
18	9.81076	15	9.92843	25	0.07157	9.88234	11	42
19	9.81091	15	9.92868	26	0.07132	9.88223	11	41
20	**9.81106**	15	**9.92894**	26	**0.07106**	**9.88212**	11	**40**
21	9.81121	15	9.92920	25	0.07080	9.88201	10	39
22	9.81136	15	9.92945	26	0.07055	9.88191	11	38
23	9.81151	15	9.92971	25	0.07029	9.88180	11	37
24	9.81166	14	9.92996	26	0.07004	9.88169	11	36
25	**9.81180**	15	**9.93022**	26	**0.06978**	**9.88158**	10	**35**
26	9.81195	15	9.93048	25	0.06952	9.88148	11	34
27	9.81210	15	9.93073	26	0.06927	9.88137	11	33
28	9.81225	15	9.93099	25	0.06901	9.88126	11	32
29	9.81240	14	9.93124	26	0.06876	9.88115	10	31
30	**9.81254**		**9.93150**		**0.06850**	**9.88105**		**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	15	14
1	0.3	0.2
2	0.5	0.5
3	0.8	0.7
4	1.0	0.9
5	1.3	1.2
6	1.5	1.4
7	1.8	1.6
8	2.0	1.9
9	2.3	2.1
10	2.5	2.3
20	5.0	4.7
30	7.5	7.0
40	10.0	9.3
50	12.5	11.7

	10	11
1	0.2	0.2
2	0.3	0.4
3	0.5	0.6
4	0.7	0.7
5	0.8	0.9
6	1.0	1.1
7	1.2	1.3
8	1.3	1.5
9	1.5	1.7
10	1.7	1.8
20	3.3	3.7
30	5.0	5.5
40	6.7	7.3
50	8.3	9.2

PP.

49°

40°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.81254**	15	**9.93150**	25	**0.06850**	**9.88105**	11	**30**
31	9.81269	15	9.93175	26	0.06825	9.88094	11	29
32	9.81284	15	9.93201	26	0.06799	9.88083	11	28
33	9.81299	15	9.93227	25	0.06773	9.88072	11	27
34	9.81314	14	9.93252	26	0.06748	9.88061	10	26
35	**9.81328**	15	**9.93278**	25	**0.06722**	**9.88051**	11	**25**
36	9.81343	15	9.93303	26	0.06697	9.88040	11	24
37	9.81358	14	9.93329	25	0.06671	9.88029	11	23
38	9.81372	15	9.93354	26	0.06646	9.88018	11	22
39	9.81387	15	9.93380	26	0.06620	9.88007	11	21
40	**9.81402**	15	**9.93406**	25	**0.06594**	**9.87996**	11	**20**
41	9.81417	14	9.93431	26	0.06569	9.87985	10	19
42	9.81431	15	9.93457	25	0.06543	9.87975	11	18
43	9.81446	15	9.93482	26	0.06518	9.87964	11	17
44	9.81461	14	9.93508	25	0.06492	9.87953	11	16
45	**9.81475**	15	**9.93533**	26	**0.06467**	**9.87942**	11	**15**
46	9.81490	15	9.93559	25	0.06441	9.87931	11	14
47	9.81505	14	9.93584	26	0.06416	9.87920	11	13
48	9.81519	15	9.93610	26	0.06390	9.87909	11	12
49	9.81534	15	9.93636	25	0.06364	9.87898	11	11
50	**9.81549**	14	**9.93661**	26	**0.06339**	**9.87887**	10	**10**
51	9.81563	15	9.93687	25	0.06313	9.87877	11	9
52	9.81578	14	9.93712	26	0.06288	9.87866	11	8
53	9.81592	15	9.93738	25	0.06262	9.87855	11	7
54	9.81607	15	9.93763	26	0.06237	9.87844	11	6
55	**9.81622**	14	**9.93789**	25	**0.06211**	**9.87833**	11	**5**
56	9.81636	15	9.93814	26	0.06186	9.87822	11	4
57	9.81651	14	9.93840	25	0.06160	9.87811	11	3
58	9.81665	15	9.93865	26	0.06135	9.87800	11	2
59	9.81680	14	9.93891	25	0.06109	9.87789	11	1
60	**9.81694**		**9.93916**		**0.06084**	**9.87778**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	15	14
1	0.3	0.2
2	0.5	0.5
3	0.8	0.7
4	1.0	0.9
5	1.3	1.2
6	1.5	1.4
7	1.8	1.6
8	2.0	1.9
9	2.3	2.1
10	2.5	2.3
20	5.0	4.7
30	7.5	7.0
40	10.0	9.3
50	12.5	11.7

	10	11
1	0.2	0.2
2	0.3	0.4
3	0.5	0.6
4	0.7	0.7
5	0.8	0.9
6	1.0	1.1
7	1.2	1.3
8	1.3	1.5
9	1.5	1.7
10	1.7	1.8
20	3.3	3.7
30	5.0	5.5
40	6.7	7.3
50	8.3	9.2

PP.

49°

41°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.81694**	15	**9.93916**	26	**0.06084**	**9.87778**	11	**60**
1	9.81709	14	9.93942	25	0.06058	9.87767	11	59
2	9.81723	15	9.93967	26	0.06033	9.87756	11	58
3	9.81738	14	9.93993	25	0.06007	9.87745	11	57
4	9.81752	15	9.94018	26	0.05982	9.87734	11	56
5	**9.81767**	14	**9.94044**	25	**0.05956**	**9.87723**	11	**55**
6	9.81781	15	9.94069	26	0.05931	9.87712	11	54
7	9.81796	14	9.94095	25	0.05905	9.87701	11	53
8	9.81810	15	9.94120	26	0.05880	9.87690	11	52
9	9.81825	14	9.94146	25	0.05854	9.87679	11	51
10	**9.81839**	15	**9.94171**	26	**0.05829**	**9.87668**	11	**50**
11	9.81854	14	9.94197	25	0.05803	9.87657	11	49
12	9.81868	14	9.94222	26	0.05778	9.87646	11	48
13	9.81882	15	9.94248	25	0.05752	9.87635	11	47
14	9.81897	14	9.94273	26	0.05727	9.87624	11	46
15	**9.81911**	15	**9.94299**	25	**0.05701**	**9.87613**	12	**45**
16	9.81926	14	9.94324	26	0.05676	9.87601	11	44
17	9.81940	15	9.94350	25	0.05650	9.87590	11	43
18	9.81955	14	9.94375	26	0.05625	9.87579	11	42
19	9.81969	14	9.94401	25	0.05599	9.87568	11	41
20	**9.81983**	15	**9.94426**	26	**0.05574**	**9.87557**	11	**40**
21	9.81998	14	9.94452	25	0.05548	9.87546	11	39
22	9.82012	14	9.94477	26	0.05523	9.87535	11	38
23	9.82026	15	9.94503	25	0.05497	9.87524	11	37
24	9.82041	14	9.94528	26	0.05472	9.87513	12	36
25	**9.82055**	14	**9.94554**	25	**0.05446**	**9.87501**	11	**35**
26	9.82069	15	9.94579	25	0.05421	9.87490	11	34
27	9.82084	14	9.94604	26	0.05396	9.87479	11	33
28	9.82098	14	9.94630	25	0.05370	9.87468	11	32
29	9.82112	14	9.94655	26	0.05345	9.87457	11	31
30	**9.82126**		**9.94681**		**0.05319**	**9.87446**		**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	15	14
1	0.3	0.2
2	0.5	0.5
3	0.8	0.7
4	1.0	0.9
5	1.3	1.2
6	1.5	1.4
7	1.8	1.6
8	2.0	1.9
9	2.3	2.1
10	2.5	2.3
20	5.0	4.7
30	7.5	7.0
40	10.0	9.3
50	12.5	11.7

	11	12
1	0.2	0.2
2	0.4	0.4
3	0.6	0.6
4	0.7	0.8
5	0.9	1.0
6	1.1	1.2
7	1.3	1.4
8	1.5	1.6
9	1.7	1.8
10	1.8	2.0
20	3.7	4.0
30	5.5	6.0
40	7.3	8.0
50	9.2	10.0

PP.

48°

41°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.82126**	15	**9.94681**	25	**0.05319**	**9.87446**	12	**30**
31	9.82141	14	9.94706	26	0.05294	9.87434	11	29
32	9.82155	14	9.94732	25	0.05268	9.87423	11	28
33	9.82169	15	9.94757	26	0.05243	9.87412	11	27
34	9.82184	14	9.94783	25	0.05217	9.87401	11	26
35	**9.82198**	14	**9.94808**	26	**0.05192**	**9.87390**	12	**25**
36	9.82212	14	9.94834	25	0.05166	9.87378	11	24
37	9.82226	14	9.94859	25	0.05141	9.87367	11	23
38	9.82240	15	9.94884	26	0.05116	9.87356	11	22
39	9.82255	14	9.94910	25	0.05090	9.87345	11	21
40	**9.82269**	14	**9.94935**	26	**0.05065**	**9.87334**	12	**20**
41	9.82283	14	9.94961	25	0.05039	9.87322	11	19
42	9.82297	14	9.94986	26	0.05014	9.87311	11	18
43	9.82311	15	9.95012	25	0.04988	9.87300	12	17
44	9.82326	14	9.95037	25	0.04963	9.87288	11	16
45	**9.82340**	14	**9.95062**	26	**0.04938**	**9.87277**	11	**15**
46	9.82354	14	9.95088	25	0.04912	9.87266	11	14
47	9.82368	14	9.95113	26	0.04887	9.87255	12	13
48	9.82382	14	9.95139	25	0.04861	9.87243	11	12
49	9.82396	14	9.95164	26	0.04836	9.87232	11	11
50	**9.82410**	14	**9.95190**	25	**0.04810**	**9.87221**	12	**10**
51	9.82424	15	9.95215	25	0.04785	9.87209	11	9
52	9.82439	14	9.95240	26	0.04760	9.87198	11	8
53	9.82453	14	9.95266	25	0.04734	9.87187	12	7
54	9.82467	14	9.95291	26	0.04709	9.87175	11	6
55	**9.82481**	14	**9.95317**	25	**0.04683**	**9.87164**	11	**5**
56	9.82495	14	9.95342	26	0.04658	9.87153	12	4
57	9.82509	14	9.95368	25	0.04632	9.87141	11	3
58	9.82523	14	9.95393	25	0.04607	9.87130	11	2
59	9.82537	14	9.95418	26	0.04582	9.87119	12	1
60	**9.82551**		**9.95444**		**0.04556**	**9.87107**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	15	14
1	0.3	0.2
2	0.5	0.5
3	0.8	0.7
4	1.0	0.9
5	1.3	1.2
6	1.5	1.4
7	1.8	1.6
8	2.0	1.9
9	2.3	2.1
10	2.5	2.3
20	5.0	4.7
30	7.5	7.0
40	10.0	9.3
50	12.5	11.7

	11	12
1	0.2	0.2
2	0.4	0.4
3	0.6	0.6
4	0.7	0.8
5	0.9	1.0
6	1.1	1.2
7	1.3	1.4
8	1.5	1.6
9	1.7	1.8
10	1.8	2.0
20	3.7	4.0
30	5.5	6.0
40	7.3	8.0
50	9.2	10.0

PP.

48°

42°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.82551**		**9.95444**		**0.04556**	**9.87107**		**60**
		14		25			11	
1	9.82565		9.95469		0.04531	9.87096		59
		14		26			11	
2	9.82579		9.95495		0.04505	9.87085		58
		14		25			12	
3	9.82593		9.95520		0.04480	9.87073		57
		14		25			11	
4	9.82607		9.95545		0.04455	9 87062		56
		14		26			12	
5	**9.82621**		**9.95571**		**0.04429**	**9.87050**		**55**
		14		25			11	
6	9.82635		9.95596		0.04404	9.87039		54
		14		26			11	
7	9.82649		9.95622		0.04378	9.87028		53
		14		25			12	
8	9.82663		9.95647		0.04353	9.87016		52
		14		25			11	
9	9.82677		9.95672		0.04328	9.87005		51
		14		26			12	
10	**9.82691**		**9.95698**		**0.04302**	**9.86993**		**50**
		14		25			11	
11	9.82705		9.95723		0.04277	9.86982		49
		14		25			12	
12	9.82719		9.95748		0.04252	9.86970		48
		14		26			11	
13	9.82733		9.95774		0.04226	9.86959		47
		14		25			12	
14	9.82747		9.95799		0.04201	9.86947		46
		14		26			11	
15	**9.82761**		**9.95825**		**0.04175**	**9.86936**		**45**
		14		25			12	
16	9.82775		9.95850		0.04150	9.86924		44
		13		25			11	
17	9.82788		9.95875		0.04125	9.86913		43
		14		26			11	
18	9.82802		9.95901		0.04099	9.86902		42
		14		25			12	
19	9.82816		9.95926		0.04074	9.86890		41
		14		26			11	
20	**9.82830**		**9.95952**		**0.04048**	**9.86879**		**40**
		14		25			12	
21	9.82844		9.95977		0.04023	9.86867		39
		14		25			12	
22	9.82858		9.96002		0.03998	9.86855		38
		14		26			11	
23	9.82872		9.96028		0.03972	9.86844		37
		13		25			12	
24	9.82885		9.96053		0.03947	9.86832		36
		14		25			11	
25	**9.82899**		**9.96078**		**0.03922**	**9.86821**		**35**
		14		26			12	
26	9.82913		9.96104		0.03896	9.86809		34
		14		25			11	
27	9.82927		9.96129		0.03871	9.86798		33
		14		26			12	
28	9.82941		9.96155		0.03845	9.86786		32
		14		25			11	
29	9.82955		9.96180		0.03820	9.86775		31
		13		25			12	
30	**9.82968**		**9.96205**		**0.03795**	**9.86763**		**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	14	13
1	0.2	0.2
2	0.5	0.4
3	0.7	0.7
4	0.9	0.9
5	1.2	1.1
6	1.4	1.3
7	1.6	1.5
8	1.9	1.7
9	2.1	2.0
10	2.3	2.2
20	4.7	4.3
30	7.0	6.5
40	9.3	8.7
50	11.7	10.8

	11	12
1	0.2	0.2
2	0.4	0.4
3	0.6	0.6
4	0.7	0.8
5	0.9	1.0
6	1.1	1.2
7	1.3	1.4
8	1.5	1.6
9	1.7	1.8
10	1.8	2.0
20	3.7	4.0
30	5.5	6.0
40	7.3	8.0
50	9.2	10.0

PP.

47°

42°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.82968**	14	**9.96205**	26	**0.03795**	**9.86763**	11	**30**
31	9.82982	14	9.96231	25	0.03769	9.86752	12	29
32	9.82996	14	9.96256	25	0.03744	9.86740	12	28
33	9.83010	13	9.96281	26	0.03719	9.86728	11	27
34	9.83023	14	9.96307	25	0.03693	9.86717	12	26
35	**9.83037**	14	**9.96332**	25	**0.03668**	**9.86705**	11	**25**
36	9.83051	14	9.96357	26	0.03643	9.86694	12	24
37	9.83065	13	9.96383	25	0.03617	9.86682	12	23
38	9.83078	14	9.96408	25	0.03592	9.86670	11	22
39	9.83092	14	9.96433	26	0.03567	9.86659	12	21
40	**9.83106**	14	**9.96459**	25	**0.03541**	**9.86647**	12	**20**
41	9.83120	13	9.96484	26	0.03516	9.86635	11	19
42	9.83133	14	9.96510	25	0.03490	9.86624	12	18
43	9.83147	14	9.96535	25	0.03465	9.86612	12	17
44	9.83161	13	9.96560	26	0.03440	9.86600	11	16
45	**9.83174**	14	**9.96586**	25	**0.03414**	**9.86589**	12	**15**
46	9.83188	14	9.96611	25	0.03389	9.86577	12	14
47	9.83202	13	9.96636	26	0.03364	9.86565	11	13
48	9.83215	14	9.96662	25	0.03338	9.86554	12	12
49	9.83229	13	9.96687	25	0.03313	9.86542	12	11
50	**9.83242**	14	**9.96712**	26	**0.03288**	**9.86530**	12	**10**
51	9.83256	14	9.96738	25	0.03262	9.86518	11	9
52	9.83270	13	9.96763	25	0.03237	9.86507	12	8
53	9.83283	14	9.96788	26	0.03212	9.86495	12	7
54	9.83297	13	9.96814	25	0.03186	9.86483	11	6
55	**9.83310**	14	**9.96839**	25	**0.03161**	**9.86472**	12	**5**
56	9.83324	14	9.96864	26	0.03136	9.86460	12	4
57	9.83338	13	9.96890	25	0.03110	9.86448	12	3
58	9.83351	14	9.96915	25	0.03085	9.86436	11	2
59	9.83365	13	9.96940	26	0.03060	9.86425	12	1
60	**9.83378**		**9.96966**		**0.03034**	**9.86413**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	14	13
1	0.2	0.2
2	0.5	0.4
3	0.7	0.7
4	0.9	0.9
5	1.2	1.1
6	1.4	1.3
7	1.6	1.5
8	1.9	1.7
9	2.1	2.0
10	2.3	2.2
20	4.7	4.3
30	7.0	6.5
40	9.3	8.7
50	11.7	10.8

	11	12
1	0.2	0.2
2	0.4	0.4
3	0.6	0.6
4	0.7	0.8
5	0.9	1.0
6	1.1	1.2
7	1.3	1.4
8	1.5	1.6
9	1.7	1.8
10	1.8	2.0
20	3.7	4.0
30	5.5	6.0
40	7.3	8.0
50	9.2	10.0

PP.

47°

43°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.83378**	14	**9.96966**	25	**0.03034**	**9.86413**	12	**60**
1	9.83392	13	9.96991	25	0.03009	9.86401	12	59
2	9.83405	14	9.97016	26	0.02984	9.86389	12	58
3	9.83419	13	9.97042	25	0.02958	9.86377	11	57
4	9.83432	14	9.97067	25	0.02933	9.86366	12	56
5	**9.83446**	13	**9.97092**	26	**0.02908**	**9.86354**	12	**55**
6	9.83459	14	9.97118	25	0.02882	9.86342	12	54
7	9.83473	13	9.97143	25	0.02857	9.86330	12	53
8	9.83486	14	9.97168	25	0.02832	9.86318	12	52
9	9.83500	13	9.97193	26	0.02807	9.86306	11	51
10	**9.83513**	14	**9.97219**	25	**0.02781**	**9.86295**	12	**50**
11	9.83527	13	9.97244	25	0.02756	9.86283	12	49
12	9.83540	14	9.97269	26	0.02731	9.86271	12	48
13	9.83554	13	9.97295	25	0.02705	9.86259	12	47
14	9.83567	14	9.97320	25	0.02680	9.86247	12	46
15	**9.83581**	13	**9.97345**	26	**0.02655**	**9.86235**	12	**45**
16	9.83594	14	9.97371	25	0.02629	9.86223	12	44
17	9.83608	13	9.97396	25	0.02604	9.86211	11	43
18	9.83621	13	9.97421	26	0.02579	9.86200	12	42
19	9.83634	14	9.97447	25	0.02553	9.86188	12	41
20	**9.83648**	13	**9.97472**	25	**0.02528**	**9.86176**	12	**40**
21	9.83661	13	9.97497	26	0.02503	9.86164	12	39
22	9.83674	14	9.97523	25	0.02477	9.86152	12	38
23	9.83688	13	9.97548	25	0.02452	9.86140	12	37
24	9.83701	14	9.97573	25	0.02427	9.86128	12	36
25	**9.83715**	13	**9.97598**	26	**0.02402**	**9.86116**	12	**35**
26	9.83728	13	9.97624	25	0.02376	9.86104	12	34
27	9.83741	14	9.97649	25	0.02351	9.86092	12	33
28	9.83755	13	9.97674	26	0.02326	9.86080	12	32
29	9.83768	13	9.97700	25	0.02300	9.86068	12	31
30	**9.83781**		**9.97725**		**0.02275**	**9.86056**		**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	14	13
1	0.2	0.2
2	0.5	0.4
3	0.7	0.7
4	0.9	0.9
5	1.2	1.1
6	1.4	1.3
7	1.6	1.5
8	1.9	1.7
9	2.1	2.0
10	2.3	2.2
20	4.7	4.3
30	7.0	6.5
40	9.3	8.7
50	11.7	10.8

	11	12
1	0.2	0.2
2	0.4	0.4
3	0.6	0.6
4	0.7	0.8
5	0.9	1.0
6	1.1	1.2
7	1.3	1.4
8	1.5	1.6
9	1.7	1.8
10	1.8	2.0
20	3.7	4.0
30	5.5	6.0
40	7.3	8.0
50	9.2	10.0

PP.

46°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.83781**		**9.97725**		**0.02275**	**9.86056**		**30**
		14		25			12	
31	9.83795		9.97750		0.02250	9.86044		29
		13		26			12	
32	9.83808		9.97776		0.02224	9.86032		28
		13		25			12	
33	9.83821		9.97801		0.02199	9.86020		27
		13		25			12	
34	9.83834		9.97826		0.02174	9.86008		26
		14		25			12	
35	**9.83848**		**9.97851**		**0.02149**	**9.85996**		**25**
		13		26			12	
36	9.83861		9.97877		0.02123	9.85984		24
		13		25			12	
37	9.83874		9.97902		0.02098	9.85972		23
		13		25			12	
38	9.83887		9.97927		0.02073	9.85960		22
		14		26			12	
39	9.83901		9.97953		0.02047	9.85948		21
		13		25			12	
40	**9.83914**		**9.97978**		**0.02022**	**9.85936**		**20**
		13		25			12	
41	9.83927		9.98003		0.01997	9.85924		19
		13		26			12	
42	9.83940		9.98029		0.01971	9.85912		18
		14		25			12	
43	9.83954		9.98054		0.01946	9.85900		17
		13		25			12	
44	9.83967		9.98079		0.01921	9.85888		16
		13		25			12	
45	**9.83980**		**9.98104**		**0.01896**	**9.85876**		**15**
		13		26			12	
46	9.83993		9.98130		0.01870	9.85864		14
		13		25			13	
47	9.84006		9.98155		0.01845	9.85851		13
		14		25			12	
48	9.84020		9.98180		0.01820	9.85839		12
		13		26			12	
49	9.84033		9.98206		0.01794	9.85827		11
		13		25			12	
50	**9.84046**		**9.98231**		**0.01769**	**9.85815**		**10**
		13		25			12	
51	9.84059		9.98256		0.01744	9.85803		9
		13		25			12	
52	9.84072		9.98281		0.01719	9.85791		8
		13		26			12	
53	9.84085		9.98307		0.01693	9.85779		7
		13		25			13	
54	9.84098		9.98332		0.01668	9.85766		6
		14		25			12	
55	**9.84112**		**9.98357**		**0.01643**	**9.85754**		**5**
		13		26			12	
56	9.84125		9.98383		0.01617	9.85742		4
		13		25			12	
57	9.84138		9.98408		0.01592	9.85730		3
		13		25			12	
58	9.84151		9.98433		0.01567	9.85718		2
		13		25			12	
59	9.84164		9.98458		0.01542	9.85706		1
		13		26			13	
60	**9.84177**		**9.98484**		**0.01516**	**9.85693**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP. Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	14	13
1	0.2	0.2
2	0.5	0.4
3	0.7	0.7
4	0.9	0.9
5	1.2	1.1
6	1.4	1.3
7	1.6	1.5
8	1.9	1.7
9	2.1	2.0
10	2.3	2.2
20	4.7	4.3
30	7.0	6.5
40	9.3	8.7
50	11.7	10.8

	12
1	0.2
2	0.4
3	0.6
4	0.8
5	1.0
6	1.2
7	1.4
8	1.6
9	1.8
10	2.0
20	4.0
30	6.0
40	8.0
50	10.0

PP.

44°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
0	**9.84177**	13	**9.98484**	25	**0.01516**	**9.85693**	12	**60**
1	9.84190	13	9.98509	25	0.01491	9.85681	12	59
2	9.84203	13	9.98534	26	0.01466	9.85669	12	58
3	9.84216	13	9.98560	25	0.01440	9.85657	12	57
4	9.84229	13	9.98585	25	0.01415	9.85645	13	56
5	**9.84242**	13	**9.98610**	25	**0.01390**	**9.85632**	12	**55**
6	9.84255	14	9.98635	26	0.01365	9.85620	12	54
7	9.84269	13	9.98661	25	0.01339	9.85608	12	53
8	9.84282	13	9.98686	25	0.01314	9.85596	13	52
9	9.84295	13	9.98711	26	0.01289	9.85583	12	51
10	**9.84308**	13	**9.98737**	25	**0.01263**	**9.85571**	12	**50**
11	9.84321	13	9.98762	25	0.01238	9.85559	12	49
12	9.84334	13	9.98787	25	0.01213	9.85547	13	48
13	9.84347	13	9.98812	26	0.01188	9.85534	12	47
14	9.84360	13	9.98838	25	0.01162	9.85522	12	46
15	**9.84373**	12	**9.98863**	25	**0.01137**	**9.85510**	13	**45**
16	9.84385	13	9.98888	25	0.01112	9.85497	12	44
17	9.84398	13	9.98913	26	0.01087	9.85485	12	43
18	9.84411	13	9.98939	25	0.01061	9.85473	13	42
19	9.84424	13	9.98964	25	0.01036	9.85460	12	41
20	**9.84437**	13	**9.98989**	26	**0.01011**	**9.85448**	12	**40**
21	9.84450	13	9.99015	25	0.00985	9.85436	13	39
22	9.84463	13	9.99040	25	0.00960	9.85423	12	38
23	9.84476	13	9.99065	25	0.00935	9.85411	12	37
24	9.84489	13	9.99090	26	0.00910	9.85399	13	36
25	**9.84502**	13	**9.99116**	25	**0.00884**	**9.85386**	12	**35**
26	9.84515	13	9.99141	25	0.00859	9.85374	13	34
27	9.84528	12	9.99166	25	0.00834	9.85361	12	33
28	9.84540	13	9.99191	26	0.00809	9.85349	12	32
29	9.84553	13	9.99217	25	0.00783	9.85337	13	31
30	**9.84566**		**9.99242**		**0.00758**	**9.85324**		**30**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	14	13
1	0.2	0.2
2	0.5	0.4
3	0.7	0.7
4	0.9	0.9
5	1.2	1.1
6	1.4	1.3
7	1.6	1.5
8	1.9	1.7
9	2.1	2.0
10	2.3	2.2
20	4.7	4.3
30	7.0	6.5
40	9.3	8.7
50	11.7	10.8

	12
1	0.2
2	0.4
3	0.6
4	0.8
5	1.0
6	1.2
7	1.4
8	1.6
9	1.8
10	2.0
20	4.0
30	6.0
40	8.0
50	10.0

PP.

45°

44°

Min.	Sine	d	Tang.	d	Cotang.	Cosine	d	↑
30	**9.84566**		**9.99242**		**0.00758**	**9.85324**		**30**
		13		25			12	
31	9.84579		9.99267		0.00733	9.85312		29
		13		26			13	
32	9.84592		9.99293		0.00707	9.85299		28
		13		25			12	
33	9.84605		9.99318		0.00682	9.85287		27
		13		25			13	
34	9.84618		9.99343		0.00657	9.85274		26
		12		25			12	
35	**9.84630**		**9.99368**		**0.00632**	**9.85262**		**25**
		13		26			12	
36	9.84643		9.99394		0.00606	9.85250		24
		13		25			13	
37	9.84656		9.99419		0.00581	9.85237		23
		13		25			12	
38	9.84669		9.99444		0.00556	9.85225		22
		13		25			13	
39	9.84682		9.99469		0.00531	9.85212		21
		12		26			12	
40	**9.84694**		**9.99495**		**0.00505**	**9.85200**		**20**
		13		25			13	
41	9.84707		9.99520		0.00480	9.85187		19
		13		25			12	
42	9.84720		9.99545		0.00455	9.85175		18
		13		25			13	
43	9.84733		9.99570		0.00430	9.85162		17
		12		26			12	
44	9.84745		9.99596		0.00404	9.85150		16
		13		25			13	
45	**9.84758**		**9.99621**		**0.00379**	**9.85137**		**15**
		13		25			12	
46	9.84771		9.99646		0.00354	9.85125		14
		13		26			13	
47	9.84784		9.99672		0.00328	9.85112		13
		12		25			12	
48	9.84796		9.99697		0.00303	9.85100		12
		13		25			13	
49	9.84809		9.99722		0.00278	9.85087		11
		13		25			13	
50	**9.84822**		**9.99747**		**0.00253**	**9.85074**		**10**
		13		26			12	
51	9.84835		9.99773		0.00227	9.85062		9
		12		25			13	
52	9.84847		9.99798		0.00202	9.85049		8
		13		25			12	
53	9.84860		9.99823		0.00177	9.85037		7
		13		25			13	
54	9.84873		9.99848		0.00152	9.85024		6
		12		26			12	
55	**9.84885**		**9.99874**		**0.00126**	**9.85012**		**5**
		13		25			13	
56	9.84898		9.99899		0.00101	9.84999		4
		13		25			13	
57	9.84911		9.99924		0.00076	9.84986		3
		12		25			12	
58	9.84923		9.99949		0.00051	9.84974		2
		13		26			13	
59	9.84936		9.99975		0.00025	9.84961		1
		13		25			12	
60	**9.84949**		**0.00000**		**0.00000**	**9.84949**		**0**
	Cosine	d	Cotang.	d	Tang.	Sine	d	Min.

PP.
Seconds

	26	25
1	0.4	0.4
2	0.9	0.8
3	1.3	1.3
4	1.7	1.7
5	2.2	2.1
6	2.6	2.5
7	3.0	2.9
8	3.5	3.3
9	3.9	3.8
10	4.3	4.2
20	8.7	8.3
30	13.0	12.5
40	17.3	16.7
50	21.7	20.8

	13	12
1	0.2	0.2
2	0.4	0.4
3	0.7	0.6
4	0.9	0.8
5	1.1	1.0
6	1.3	1.2
7	1.5	1.4
8	1.7	1.6
9	2.0	1.8
10	2.2	2.0
20	4.3	4.0
30	6.5	6.0
40	8.7	8.0
50	10.8	10.0

PP.

45°

	0°		1°		2°		3°		4°		
′	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos	′
0	**0000**	**1.000**	**0175**	**9998**	**0349**	**9994**	**0523**	**9986**	**0698**	**9976**	**60**
1	0003	1.000	0177	9998	0352	9994	0526	9986	0700	9975	59
2	0006	1.000	0180	9998	0355	9994	0529	9986	0703	9975	58
3	0009	1.000	0183	9998	0358	9994	0532	9986	0706	9975	57
4	0012	1.000	0186	9998	0361	9993	0535	9986	0709	9975	56
5	**0015**	**1.000**	**0189**	**9998**	**0364**	**9993**	**0538**	**9986**	**0712**	**9975**	**55**
6	0017	1.000	0192	9998	0366	9993	0541	9985	0715	9974	54
7	0020	1.000	0195	9998	0369	9993	0544	9985	0718	9974	53
8	0023	1.000	0198	9998	0372	9993	0547	9985	0721	9974	52
9	0026	1.000	0201	9998	0375	9993	0550	9985	0724	9974	51
10	**0029**	**1.000**	**0204**	**9998**	**0378**	**9993**	**0552**	**9985**	**0727**	**9974**	**50**
11	0032	1.000	0207	9998	0381	9993	0555	9985	0729	9973	49
12	0035	1.000	0209	9998	0384	9993	0558	9984	0732	9973	48
13	0038	1.000	0212	9998	0387	9993	0561	9984	0735	9973	47
14	0041	1.000	0215	9998	0390	9992	0564	9984	0738	9973	46
15	**0044**	**1.000**	**0218**	**9998**	**0393**	**9992**	**0567**	**9984**	**0741**	**9973**	**45**
16	0047	1.000	0221	9998	0396	9992	0570	9984	0744	9972	44
17	0049	1.000	0224	9997	0398	9992	0573	9984	0747	9972	43
18	0052	1.000	0227	9997	0401	9992	0576	9983	0750	9972	42
19	0055	1.000	0230	9997	0404	9992	0579	9983	0753	9972	41
20	**0058**	**1.000**	**0233**	**9997**	**0407**	**9992**	**0581**	**9983**	**0756**	**9971**	**40**
21	0061	1.000	0236	9997	0410	9992	0584	9983	0758	9971	39
22	0064	1.000	0239	9997	0413	9991	0587	9983	0761	9971	38
23	0067	1.000	0241	9997	0416	9991	0590	9983	0764	9971	37
24	0070	1.000	0244	9997	0419	9991	0593	9982	0767	9971	36
25	**0073**	**1.000**	**0247**	**9997**	**0422**	**9991**	**0596**	**9982**	**0770**	**9970**	**35**
26	0076	1.000	0250	9997	0425	9991	0599	9982	0773	9970	34
27	0079	1.000	0253	9997	0427	9991	0602	9982	0776	9970	33
28	0081	1.000	0256	9997	0430	9991	0605	9982	0779	9970	32
29	0084	1.000	0259	9997	0433	9991	0608	9982	0782	9969	31
30	**0087**	**1.000**	**0262**	**9997**	**0436**	**9990**	**0610**	**9981**	**0785**	**9969**	**30**
31	0090	1.000	0265	9996	0439	9990	0613	9981	0787	9969	29
32	0093	1.000	0268	9996	0442	9990	0616	9981	0790	9969	28
33	0096	1.000	0270	9996	0445	9990	0619	9981	0793	9968	27
34	0099	1.000	0273	9996	0448	9990	0622	9981	0796	9968	26
35	**0102**	**9999**	**0276**	**9996**	**0451**	**9990**	**0625**	**9980**	**0799**	**9968**	**25**
36	0105	9999	0279	9996	0454	9990	0628	9980	0802	9968	24
37	0108	9999	0282	9996	0457	9990	0631	9980	0805	9968	23
38	0111	9999	0285	9996	0459	9989	0634	9980	0808	9967	22
39	0113	9999	0288	9996	0462	9989	0637	9980	0811	9967	21
40	**0116**	**9999**	**0291**	**9996**	**0465**	**9989**	**0640**	**9980**	**0814**	**9967**	**20**
41	0119	9999	0294	9996	0468	9989	0642	9979	0816	9967	19
42	0122	9999	0297	9996	0471	9989	0645	9979	0819	9966	18
43	0125	9999	0300	9996	0474	9989	0648	9979	0822	9966	17
44	0128	9999	0302	9995	0477	9989	0651	9979	0825	9966	16
45	**0131**	**9999**	**0305**	**9995**	**0480**	**9988**	**0654**	**9979**	**0828**	**9966**	**15**
46	0134	9999	0308	9995	0483	9988	0657	9978	0831	9965	14
47	0137	9999	0311	9995	0486	9988	0660	9978	0834	9965	13
48	0140	9999	0314	9995	0488	9988	0663	9978	0837	9965	12
49	0143	9999	0317	9995	0491	9988	0666	9978	0840	9965	11
50	**0145**	**9999**	**0320**	**9995**	**0494**	**9988**	**0669**	**9978**	**0843**	**9964**	**10**
51	0148	9999	0323	9995	0497	9988	0671	9977	0845	9964	9
52	0151	9999	0326	9995	0500	9987	0674	9977	0848	9964	8
53	0154	9999	0329	9995	0503	9987	0677	9977	0851	9964	7
54	0157	9999	0332	9995	0506	9987	0680	9977	0854	9963	6
55	**0160**	**9999**	**0334**	**9994**	**0509**	**9987**	**0683**	**9977**	**0857**	**9963**	**5**
56	0163	9999	0337	9994	0512	9987	0686	9976	0860	9963	4
57	0166	9999	0340	9994	0515	9987	0689	9976	0863	9963	3
58	0169	9999	0343	9994	0518	9987	0692	9976	0866	9962	2
59	0172	9999	0346	9994	0520	9986	0695	9976	0869	9962	1
60	**0175**	**9999**	**0349**	**9994**	**0523**	**9986**	**0698**	**9976**	**0872**	**9962**	**0**
′	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin	′
	89°		88°		87°		86°		85°		

	5°		6°		7°		8°		9°		
′	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos	′
0	**0872**	**9962**	**1045**	**9945**	**1219**	**9925**	**1392**	**9903**	**1564**	**9877**	**60**
1	0874	9962	1048	9945	1222	9925	1395	9902	1567	9876	59
2	0877	9961	1051	9945	1224	9925	1397	9902	1570	9876	58
3	0880	9961	1054	9944	1227	9924	1400	9901	1573	9876	57
4	0883	9961	1057	9944	1230	9924	1403	9901	1576	9875	56
5	**0886**	**9961**	**1060**	**9944**	**1233**	**9924**	**1406**	**9901**	**1579**	**9875**	**55**
6	0889	9960	1063	9943	1236	9923	1409	9900	1582	9874	54
7	0892	9960	1066	9943	1239	9923	1412	9900	1584	9874	53
8	0895	9960	1068	9943	1242	9923	1415	9899	1587	9873	52
9	0898	9960	1071	9942	1245	9922	1418	9899	1590	9873	51
10	**0901**	**9959**	**1074**	**9942**	**1248**	**9922**	**1421**	**9899**	**1593**	**9872**	**50**
11	0903	9959	1077	9942	1250	9922	1423	9898	1596	9872	49
12	0906	9959	1080	9942	1253	9921	1426	9898	1599	9871	48
13	0909	9959	1083	9941	1256	9921	1429	9897	1602	9871	47
14	0912	9958	1086	9941	1259	9920	1432	9897	1605	9870	46
15	**0915**	**9958**	**1089**	**9941**	**1262**	**9920**	**1435**	**9897**	**1607**	**9870**	**45**
16	0918	9958	1092	9940	1265	9920	1438	9896	1610	9869	44
17	0921	9958	1094	9940	1268	9919	1441	9896	1613	9869	43
18	0924	9957	1097	9940	1271	9919	1444	9895	1616	9869	42
19	0927	9957	1100	9939	1274	9919	1446	9895	1619	9868	41
20	**0929**	**9957**	**1103**	**9939**	**1276**	**9918**	**1449**	**9894**	**1622**	**9868**	**40**
21	0932	9956	1106	9939	1279	9918	1452	9894	1625	9867	39
22	0935	9956	1109	9938	1282	9917	1455	9894	1628	9867	38
23	0938	9956	1112	9938	1285	9917	1458	9893	1630	9866	37
24	0941	9956	1115	9938	1288	9917	1461	9893	1633	9866	36
25	**0944**	**9955**	**1118**	**9937**	**1291**	**9916**	**1464**	**9892**	**1636**	**9865**	**35**
26	0947	9955	1120	9937	1294	9916	1467	9892	1639	9865	34
27	0950	9955	1123	9937	1297	9916	1469	9891	1642	9864	33
28	0953	9955	1126	9936	1299	9915	1472	9891	1645	9864	32
29	0956	9954	1129	9936	1302	9915	1475	9891	1648	9863	31
30	**0958**	**9954**	**1132**	**9936**	**1305**	**9914**	**1478**	**9890**	**1650**	**9863**	**30**
31	0961	9954	1135	9935	1308	9914	1481	9890	1653	9862	29
32	0964	9953	1138	9935	1311	9914	1484	9889	1656	9862	28
33	0967	9953	1141	9935	1314	9913	1487	9889	1659	9861	27
34	0970	9953	1144	9934	1317	9913	1490	9888	1662	9861	26
35	**0973**	**9953**	**1146**	**9934**	**1320**	**9913**	**1492**	**9888**	**1665**	**9860**	**25**
36	0976	9952	1149	9934	1323	9912	1495	9888	1668	9860	24
37	0979	9952	1152	9933	1325	9912	1498	9887	1671	9859	23
38	0982	9952	1155	9933	1328	9911	1501	9887	1673	9859	22
39	0985	9951	1158	9933	1331	9911	1504	9886	1676	9859	21
40	**0987**	**9951**	**1161**	**9932**	**1334**	**9911**	**1507**	**9886**	**1679**	**9858**	**20**
41	0990	9951	1164	9932	1337	9910	1510	9885	1682	9858	19
42	0993	9951	1167	9932	1340	9910	1513	9885	1685	9857	18
43	0996	9950	1170	9931	1343	9909	1515	9884	1688	9857	17
44	0999	9950	1172	9931	1346	9909	1518	9884	1691	9856	16
45	**1002**	**9950**	**1175**	**9931**	**1349**	**9909**	**1521**	**9884**	**1693**	**9856**	**15**
46	1005	9949	1178	9930	1351	9908	1524	9883	1696	9855	14
47	1008	9949	1181	9930	1354	9908	1527	9883	1699	9855	13
48	1011	9949	1184	9930	1357	9907	1530	9882	1702	9854	12
49	1013	9949	1187	9929	1360	9907	1533	9882	1705	9854	11
50	**1016**	**9948**	**1190**	**9929**	**1363**	**9907**	**1536**	**9881**	**1708**	**9853**	**10**
51	1019	9948	1193	9929	1366	9906	1538	9881	1711	9853	9
52	1022	9948	1196	9928	1369	9906	1541	9880	1714	9852	8
53	1025	9947	1198	9928	1372	9905	1544	9880	1716	9852	7
54	1028	9947	1201	9928	1374	9905	1547	9880	1719	9851	6
55	**1031**	**9947**	**1204**	**9927**	**1377**	**9905**	**1550**	**9879**	**1722**	**9851**	**5**
56	1034	9946	1207	9927	1380	9904	1553	9879	1725	9850	4
57	1037	9946	1210	9927	1383	9904	1556	9878	1728	9850	3
58	1039	9946	1213	9926	1386	9903	1559	9878	1731	9849	2
59	1042	9946	1216	9926	1389	9903	1561	9877	1734	9849	1
60	**1045**	**9945**	**1219**	**9925**	**1392**	**9903**	**1564**	**9877**	**1736**	**9848**	**0**
′	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin	′
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0	**1736**	**9848**	**1908**	**9816**	**2079**	**9781**	**2250**	**9744**	**2419**	**9703**	**60**
1	1739	9848	1911	9816	2082	9781	2252	9743	2422	9702	59
2	1742	9847	1914	9815	2085	9780	2255	9742	2425	9702	58
3	1745	9847	1917	9815	2088	9780	2258	9742	2428	9701	57
4	1748	9846	1920	9814	2090	9779	2261	9741	2431	9700	56
5	**1751**	**9846**	**1922**	**9813**	**2093**	**9778**	**2264**	**9740**	**2433**	**9699**	**55**
6	1754	9845	1925	9813	2096	9778	2267	9740	2436	9699	54
7	1757	9845	1928	9812	2099	9777	2269	9739	2439	9698	53
8	1759	9844	1931	9812	2102	9777	2272	9738	2442	9697	52
9	1762	9843	1934	9811	2105	9776	2275	9738	2445	9697	51
10	**1765**	**9843**	**1937**	**9811**	**2108**	**9775**	**2278**	**9737**	**2447**	**9696**	**50**
11	1768	9842	1939	9810	2110	9775	2281	9736	2450	9695	49
12	1771	9842	1942	9810	2113	9774	2284	9736	2453	9694	48
13	1774	9841	1945	9809	2116	9774	2286	9735	2456	9694	47
14	1777	9841	1948	9808	2119	9773	2289	9734	2459	9693	46
15	**1779**	**9840**	**1951**	**9808**	**2122**	**9772**	**2292**	**9734**	**2462**	**9692**	**45**
16	1782	9840	1954	9807	2125	9772	2295	9733	2464	9692	44
17	1785	9839	1957	9807	2127	9771	2298	9732	2467	9691	43
18	1788	9839	1959	9806	2130	9770	2300	9732	2470	9690	42
19	1791	9838	1962	9806	2133	9770	2303	9731	2473	9689	41
20	**1794**	**9838**	**1965**	**9805**	**2136**	**9769**	**2306**	**9730**	**2476**	**9689**	**40**
21	1797	9837	1968	9804	2139	9769	2309	9730	2478	9688	39
22	1799	9837	1971	9804	2142	9768	2312	9729	2481	9687	38
23	1802	9836	1974	9803	2145	9767	2315	9728	2484	9687	37
24	1805	9836	1977	9803	2147	9767	2317	9728	2487	9686	36
25	**1808**	**9835**	**1979**	**9802**	**2150**	**9766**	**2320**	**9727**	**2490**	**9685**	**35**
26	1811	9835	1982	9802	2153	9765	2323	9726	2493	9684	34
27	1814	9834	1985	9801	2156	9765	2326	9726	2495	9684	33
28	1817	9834	1988	9800	2159	9764	2329	9725	2498	9683	32
29	1819	9833	1991	9800	2162	9764	2332	9724	2501	9682	31
30	**1822**	**9833**	**1994**	**9799**	**2164**	**9763**	**2334**	**9724**	**2504**	**9681**	**30**
31	1825	9832	1997	9799	2167	9762	2337	9723	2507	9681	29
32	1828	9831	1999	9798	2170	9762	2340	9722	2509	9680	28
33	1831	9831	2002	9798	2173	9761	2343	9722	2512	9679	27
34	1834	9830	2005	9797	2176	9760	2346	9721	2515	9679	26
35	**1837**	**9830**	**2008**	**9796**	**2179**	**9760**	**2349**	**9720**	**2518**	**9678**	**25**
36	1840	9829	2011	9796	2181	9759	2351	9720	2521	9677	24
37	1842	9829	2014	9795	2184	9759	2354	9719	2524	9676	23
38	1845	9828	2016	9795	2187	9758	2357	9718	2526	9676	22
39	1848	9828	2019	9794	2190	9757	2360	9718	2529	9675	21
40	**1851**	**9827**	**2022**	**9793**	**2193**	**9757**	**2363**	**9717**	**2532**	**9674**	**20**
41	1854	9827	2025	9793	2196	9756	2366	9716	2535	9673	19
42	1857	9826	2028	9792	2198	9755	2368	9715	2538	9673	18
43	1860	9826	2031	9792	2201	9755	2371	9715	2540	9672	17
44	1862	9825	2034	9791	2204	9754	2374	9714	2543	9671	16
45	**1865**	**9825**	**2036**	**9790**	**2207**	**9753**	**2377**	**9713**	**2546**	**9670**	**15**
46	1868	9824	2039	9790	2210	9753	2380	9713	2549	9670	14
47	1871	9823	2042	9789	2213	9752	2383	9712	2552	9669	13
48	1874	9823	2045	9789	2215	9751	2385	9711	2554	9668	12
49	1877	9822	2048	9788	2218	9751	2388	9711	2557	9667	11
50	**1880**	**9822**	**2051**	**9787**	**2221**	**9750**	**2391**	**9710**	**2560**	**9667**	**10**
51	1882	9821	2054	9787	2224	9750	2394	9709	2563	9666	9
52	1885	9821	2056	9786	2227	9749	2397	9709	2566	9665	8
53	1888	9820	2059	9786	2230	9748	2399	9708	2569	9665	7
54	1891	9820	2062	9785	2233	9748	2402	9707	2571	9664	6
55	**1894**	**9819**	**2065**	**9784**	**2235**	**9747**	**2405**	**9706**	**2574**	**9663**	**5**
56	1897	9818	2068	9784	2238	9746	2408	9706	2577	9662	4
57	1900	9818	2071	9783	2241	9746	2411	9705	2580	9662	3
58	1902	9817	2073	9783	2244	9745	2414	9704	2583	9661	2
59	1905	9817	2076	9782	2247	9744	2416	9704	2585	9660	1
60	**1908**	**9816**	**2079**	**9781**	**2250**	**9744**	**2419**	**9703**	**2588**	**9659**	**0**
′	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin	′
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0	**2588**	**9659**	**2756**	**9613**	**2924**	**9563**	**3090**	**9511**	**3256**	**9455**	**60**
1	2591	9659	2759	9612	2926	9562	3093	9510	3258	9454	59
2	2594	9658	2762	9611	2929	9561	3096	9509	3261	9453	58
3	2597	9657	2765	9610	2932	9560	3098	9508	3264	9452	57
4	2599	9656	2768	9609	2935	9560	3101	9507	3267	9451	56
5	**2602**	**9655**	**2770**	**9609**	**2938**	**9559**	**3104**	**9506**	**3269**	**9450**	**55**
6	2605	9655	2773	9608	2940	9558	3107	9505	3272	9449	54
7	2608	9654	2776	9607	2943	9557	3110	9504	3275	9449	53
8	2611	9653	2779	9606	2946	9556	3112	9503	3278	9448	52
9	2613	9652	2782	9605	2949	9555	3115	9502	3280	9447	51
10	**2616**	**9652**	**2784**	**9605**	**2952**	**9555**	**3118**	**9502**	**3283**	**9446**	**50**
11	2619	9651	2787	9604	2954	9554	3121	9501	3286	9445	49
12	2622	9650	2790	9603	2957	9553	3123	9500	3289	9444	48
13	2625	9649	2793	9602	2960	9552	3126	9499	3291	9443	47
14	2628	9649	2795	9601	2963	9551	3129	9498	3294	9442	46
15	**2630**	**9648**	**2798**	**9600**	**2965**	**9550**	**3132**	**9497**	**3297**	**9441**	**45**
16	2633	9647	2801	9600	2968	9549	3134	9496	3300	9440	44
17	2636	9646	2804	9599	2971	9548	3137	9495	3302	9439	43
18	2639	9646	2807	9598	2974	9548	3140	9494	3305	9438	42
19	2642	9645	2809	9597	2977	9547	3143	9493	3308	9437	41
20	**2644**	**9644**	**2812**	**9596**	**2979**	**9546**	**3145**	**9492**	**3311**	**9436**	**40**
21	2647	9643	2815	9596	2982	9545	3148	9492	3313	9435	39
22	2650	9642	2818	9595	2985	9544	3151	9491	3316	9434	38
23	2653	9642	2821	9594	2988	9543	3154	9490	3319	9433	37
24	2656	9641	2823	9593	2990	9542	3156	9489	3322	9432	36
25	**2658**	**9640**	**2826**	**9592**	**2993**	**9542**	**3159**	**9488**	**3324**	**9431**	**35**
26	2661	9639	2829	9591	2996	9541	3162	9487	3327	9430	34
27	2664	9639	2832	9591	2999	9540	3165	9486	3330	9429	33
28	2667	9638	2835	9590	3002	9539	3168	9485	3333	9428	32
29	2670	9637	2837	9589	3004	9538	3170	9484	3335	9427	31
30	**2672**	**9636**	**2840**	**9588**	**3007**	**9537**	**3173**	**9483**	**3338**	**9426**	**30**
31	2675	9636	2843	9587	3010	9536	3176	9482	3341	9425	29
32	2678	9635	2846	9587	3013	9535	3179	9481	3344	9424	28
33	2681	9634	2849	9586	3015	9535	3181	9480	3346	9423	27
34	2684	9633	2851	9585	3018	9534	3184	9480	3349	9423	26
35	**2686**	**9632**	**2854**	**9584**	**3021**	**9533**	**3187**	**9479**	**3352**	**9422**	**25**
36	2689	9632	2857	9583	3024	9532	3190	9478	3355	9421	24
37	2692	9631	2860	9582	3026	9531	3192	9477	3357	9420	23
38	2695	9630	2862	9582	3029	9530	3195	9476	3360	9419	22
39	2698	9629	2865	9581	3032	9529	3198	9475	3363	9418	21
40	**2700**	**9628**	**2868**	**9580**	**3035**	**9528**	**3201**	**9474**	**3365**	**9417**	**20**
41	2703	9628	2871	9579	3038	9527	3203	9473	3368	9416	19
42	2706	9627	2874	9578	3040	9527	3206	9472	3371	9415	18
43	2709	9626	2876	9577	3043	9526	3209	9471	3374	9414	17
44	2712	9625	2879	9577	3046	9525	3212	9470	3376	9413	16
45	**2714**	**9625**	**2882**	**9576**	**3049**	**9524**	**3214**	**9469**	**3379**	**9412**	**15**
46	2717	9624	2885	9575	3051	9523	3217	9468	3382	9411	14
47	2720	9623	2888	9574	3054	9522	3220	9467	3385	9410	13
48	2723	9622	2890	9573	3057	9521	3223	9466	3387	9409	12
49	2726	9621	2893	9572	3060	9520	3225	9466	3390	9408	11
50	**2728**	**9621**	**2896**	**9572**	**3062**	**9520**	**3228**	**9465**	**3393**	**9407**	**10**
51	2731	9620	2899	9571	3065	9519	3231	9464	3396	9406	9
52	2734	9619	2901	9570	3068	9518	3234	9463	3398	9405	8
53	2737	9618	2904	9569	3071	9517	3236	9462	3401	9404	7
54	2740	9617	2907	9568	3074	9516	3239	9461	3404	9403	6
55	**2742**	**9617**	**2910**	**9567**	**3076**	**9515**	**3242**	**9460**	**3407**	**9402**	**5**
56	2745	9616	2913	9566	3079	9514	3245	9459	3409	9401	4
57	2748	9615	2915	9566	3082	9513	3247	9458	3412	9400	3
58	2751	9614	2918	9565	3085	9512	3250	9457	3415	9399	2
59	2754	9613	2921	9564	3087	9511	3253	9456	3417	9398	1
60	**2756**	**9613**	**2924**	**9563**	**3090**	**9511**	**3256**	**9455**	**3420**	**9397**	**0**
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1	3423	9396	3586	9335	3749	9271	3910	9204	4070	9134	59
2	3426	9395	3589	9334	3751	9270	3913	9203	4073	9133	58
3	3428	9394	3592	9333	3754	9269	3915	9202	4075	9132	57
4	3431	9393	3595	9332	3757	9267	3918	9200	4078	9131	56
5	**3434**	**9392**	**3597**	**9331**	**3760**	**9266**	**3921**	**9199**	**4081**	**9130**	**55**
6	3437	9391	3600	9330	3762	9265	3923	9198	4083	9128	54
7	3439	9390	3603	9328	3765	9264	3926	9197	4086	9127	53
8	3442	9389	3605	9327	3768	9263	3929	9196	4089	9126	52
9	3445	9388	3608	9326	3770	9262	3931	9195	4091	9125	51
10	**3448**	**9387**	**3611**	**9325**	**3773**	**9261**	**3934**	**9194**	**4094**	**9124**	**50**
11	3450	9386	3614	9324	3776	9260	3937	9192	4097	9122	49
12	3453	9385	3616	9323	3778	9259	3939	9191	4099	9121	48
13	3456	9384	3619	9322	3781	9258	3942	9190	4102	9120	47
14	3458	9383	3622	9321	3784	9257	3945	9189	4105	9119	46
15	**3461**	**9382**	**3624**	**9320**	**3786**	**9255**	**3947**	**9188**	**4107**	**9118**	**45**
16	3464	9381	3627	9319	3789	9254	3950	9187	4110	9116	44
17	3467	9380	3630	9318	3792	9253	3953	9186	4112	9115	43
18	3469	9379	3633	9317	3795	9252	3955	9184	4115	9114	42
19	3472	9378	3635	9316	3797	9251	3958	9183	4118	9113	41
20	**3475**	**9377**	**3638**	**9315**	**3800**	**9250**	**3961**	**9182**	**4120**	**9112**	**40**
21	3478	9376	3641	9314	3803	9249	3963	9181	4123	9110	39
22	3480	9375	3643	9313	3805	9248	3966	9180	4126	9109	38
23	3483	9374	3646	9312	3808	9247	3969	9179	4128	9108	37
24	3486	9373	3649	9311	3811	9245	3971	9178	4131	9107	36
25	**3488**	**9372**	**3651**	**9309**	**3813**	**9244**	**3974**	**9176**	**4134**	**9106**	**35**
26	3491	9371	3654	9308	3816	9243	3977	9175	4136	9104	34
27	3494	9370	3657	9307	3819	9242	3979	9174	4139	9103	33
28	3497	9369	3660	9306	3821	9241	3982	9173	4142	9102	32
29	3499	9368	3662	9305	3824	9240	3985	9172	4144	9101	31
30	**3502**	**9367**	**3665**	**9304**	**3827**	**9239**	**3987**	**9171**	**4147**	**9100**	**30**
31	3505	9366	3668	9303	3830	9238	3990	9169	4150	9098	29
32	3508	9365	3670	9302	3832	9237	3993	9168	4152	9097	28
33	3510	9364	3673	9301	3835	9235	3995	9167	4155	9096	27
34	3513	9363	3676	9300	3838	9234	3998	9166	4158	9095	26
35	**3516**	**9362**	**3679**	**9299**	**3840**	**9233**	**4001**	**9165**	**4160**	**9094**	**25**
36	3518	9361	3681	9298	3843	9232	4003	9164	4163	9092	24
37	3521	9360	3684	9297	3846	9231	4006	9162	4165	9091	23
38	3524	9359	3687	9296	3848	9230	4009	9161	4168	9090	22
39	3527	9358	3689	9295	3851	9229	4011	9160	4171	9089	21
40	**3529**	**9356**	**3692**	**9293**	**3854**	**9228**	**4014**	**9159**	**4173**	**9088**	**20**
41	3532	9355	3695	9292	3856	9227	4017	9158	4176	9086	19
42	3535	9354	3697	9291	3859	9225	4019	9157	4179	9085	18
43	3537	9353	3700	9290	3862	9224	4022	9155	4181	9084	17
44	3540	9352	3703	9289	3864	9223	4025	9154	4184	9083	16
45	**3543**	**9351**	**3706**	**9288**	**3867**	**9222**	**4027**	**9153**	**4187**	**9081**	**15**
46	3546	9350	3708	9287	3870	9221	4030	9152	4189	9080	14
47	3548	9349	3711	9286	3872	9220	4033	9151	4192	9079	13
48	3551	9348	3714	9285	3875	9219	4035	9150	4195	9078	12
49	3554	9347	3716	9284	3878	9218	4038	9148	4197	9077	11
50	**3557**	**9346**	**3719**	**9283**	**3881**	**9216**	**4041**	**9147**	**4200**	**9075**	**10**
51	3559	9345	3722	9282	3883	9215	4043	9146	4202	9074	9
52	3562	9344	3724	9281	3886	9214	4046	9145	4205	9073	8
53	3565	9343	3727	9279	3889	9213	4049	9144	4208	9072	7
54	3567	9342	3730	9278	3891	9212	4051	9143	4210	9070	6
55	**3570**	**9341**	**3733**	**9277**	**3894**	**9211**	**4054**	**9141**	**4213**	**9069**	**5**
56	3573	9340	3735	9276	3897	9210	4057	9140	4216	9068	4
57	3576	9339	3738	9275	3899	9208	4059	9139	4218	9067	3
58	3578	9338	3741	9274	3902	9207	4062	9138	4221	9066	2
59	3581	9337	3743	9273	3905	9206	4065	9137	4224	9064	1
60	**3584**	**9336**	**3746**	**9272**	**3907**	**9205**	**4067**	**9135**	**4226**	**9063**	**0**
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	69°		68°		67°		66°		65°		

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′	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos	′
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1	4229	9062	4386	8987	4542	8909	4697	8828	4851	8745	59
2	4231	9061	4389	8985	4545	8907	4700	8827	4853	8743	58
3	4234	9059	4392	8984	4548	8906	4702	8825	4856	8742	57
4	4237	9058	4394	8983	4550	8905	4705	8824	4858	8741	56
5	4239	9057	4397	8982	4553	8903	4708	8823	4861	8739	55
6	4242	9056	4399	8980	4555	8902	4710	8821	4863	8738	54
7	4245	9054	4402	8979	4558	8901	4713	8820	4866	8736	53
8	4247	9053	4405	8978	4561	8899	4715	8819	4868	8735	52
9	4250	9052	4407	8976	4563	8898	4718	8817	4871	8733	51
10	4253	9051	4410	8975	4566	8897	4720	8816	4874	8732	50
11	4255	9050	4412	8974	4568	8895	4723	8814	4876	8731	49
12	4258	9048	4415	8973	4571	8894	4726	8813	4879	8729	48
13	4260	9047	4418	8971	4574	8893	4728	8812	4881	8728	47
14	4263	9046	4420	8970	4576	8892	4731	8810	4884	8726	46
15	4266	9045	4423	8969	4579	8890	4733	8809	4886	8725	45
16	4268	9043	4425	8967	4581	8889	4736	8808	4889	8724	44
17	4271	9042	4428	8966	4584	8888	4738	8806	4891	8722	43
18	4274	9041	4431	8965	4586	8886	4741	8805	4894	8721	42
19	4276	9040	4433	8964	4589	8885	4743	8803	4896	8719	41
20	4279	9038	4436	8962	4592	8884	4746	8802	4899	8718	40
21	4281	9037	4439	8961	4594	8882	4749	8801	4901	8716	39
22	4284	9036	4441	8960	4597	8881	4751	8799	4904	8715	38
23	4287	9035	4444	8958	4599	8879	4754	8798	4907	8714	37
24	4289	9033	4446	8957	4602	8878	4756	8796	4909	8712	36
25	4292	9032	4449	8956	4605	8877	4759	8795	4912	8711	35
26	4295	9031	4452	8955	4607	8875	4761	8794	4914	8709	34
27	4297	9030	4454	8953	4610	8874	4764	8792	4917	8708	33
28	4300	9028	4457	8952	4612	8873	4766	8791	4919	8706	32
29	4302	9027	4459	8951	4615	8871	4769	8790	4922	8705	31
30	4305	9026	4462	8949	4617	8870	4772	8788	4924	8704	30
31	4308	9025	4465	8948	4620	8869	4774	8787	4927	8702	29
32	4310	9023	4467	8947	4623	8867	4777	8785	4929	8701	28
33	4313	9022	4470	8945	4625	8866	4779	8784	4932	8699	27
34	4316	9021	4472	8944	4628	8865	4782	8783	4934	8698	26
35	4318	9020	4475	8943	4630	8863	4784	8781	4937	8696	25
36	4321	9018	4478	8942	4633	8862	4787	8780	4939	8695	24
37	4323	9017	4480	8940	4636	8861	4789	8778	4942	8694	23
38	4326	9016	4483	8939	4638	8859	4792	8777	4944	8692	22
39	4329	9015	4485	8938	4641	8858	4795	8776	4947	8691	21
40	4331	9013	4488	8936	4643	8857	4797	8774	4950	8689	20
41	4334	9012	4491	8935	4646	8855	4800	8773	4952	8688	19
42	4337	9011	4493	8934	4648	8854	4802	8771	4955	8686	18
43	4339	9010	4496	8932	4651	8853	4805	8770	4957	8685	17
44	4342	9008	4498	8931	4654	8851	4807	8769	4960	8683	16
45	4344	9007	4501	8930	4656	8850	4810	8767	4962	8682	15
46	4347	9006	4504	8928	4659	8849	4812	8766	4965	8681	14
47	4350	9004	4506	8927	4661	8847	4815	8764	4967	8679	13
48	4352	9003	4509	8926	4664	8846	4818	8763	4970	8678	12
49	4355	9002	4511	8925	4666	8844	4820	8762	4972	8676	11
50	4358	9001	4514	8923	4669	8843	4823	8760	4975	8675	10
51	4360	8999	4517	8922	4672	8842	4825	8759	4977	8673	9
52	4363	8998	4519	8921	4674	8840	4828	8757	4980	8672	8
53	4365	8997	4522	8919	4677	8839	4830	8756	4982	8670	7
54	4368	8996	4524	8918	4679	8838	4833	8755	4985	8669	6
55	4371	8994	4527	8917	4682	8836	4835	8753	4987	8668	5
56	4373	8993	4530	8915	4684	8835	4838	8752	4990	8666	4
57	4376	8992	4532	8914	4687	8834	4840	8750	4992	8665	3
58	4378	8990	4535	8913	4690	8832	4843	8749	4995	8663	2
59	4381	8989	4537	8911	4692	8831	4846	8748	4997	8662	1
60	4384	8988	4540	8910	4695	8829	4848	8746	5000	8660	0
′	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin	′
	64°		63°		62°		61°		60°		

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0	**5000**	**8660**	**5150**	**8572**	**5299**	**8480**	**5446**	**8387**	**5592**	**8290**	**60**
1	5003	8659	5153	8570	5302	8479	5449	8385	5594	8289	59
2	5005	8657	5155	8569	5304	8477	5451	8384	5597	8287	58
3	5008	8656	5158	8567	5307	8476	5454	8382	5599	8285	57
4	5010	8654	5160	8566	5309	8474	5456	8380	5602	8284	56
5	**5013**	**8653**	**5163**	**8564**	**5312**	**8473**	**5459**	**8379**	**5604**	**8282**	**55**
6	5015	8652	5165	8563	5314	8471	5461	8377	5606	8281	54
7	5018	8650	5168	8561	5316	8470	5463	8376	5609	8279	53
8	5020	8649	5170	8560	5319	8468	5466	8374	5611	8277	52
9	5023	8647	5173	8558	5321	8467	5468	8372	5614	8276	51
10	**5025**	**8646**	**5175**	**8557**	**5324**	**8465**	**5471**	**8371**	**5616**	**8274**	**50**
11	5028	8644	5178	8555	5326	8463	5473	8369	5618	8272	49
12	5030	8643	5180	8554	5329	8462	5476	8368	5621	8271	48
13	5033	8641	5183	8552	5331	8460	5478	8366	5623	8269	47
14	5035	8640	5185	8551	5334	8459	5480	8364	5626	8268	46
15	**5038**	**8638**	**5188**	**8549**	**5336**	**8457**	**5483**	**8363**	**5628**	**8266**	**45**
16	5040	8637	5190	8548	5339	8456	5485	8361	5630	8264	44
17	5043	8635	5193	8546	5341	8454	5488	8360	5633	8263	43
18	5045	8634	5195	8545	5344	8453	5490	8358	5635	8261	42
19	5048	8632	5198	8543	5346	8451	5493	8356	5638	8259	41
20	**5050**	**8631**	**5200**	**8542**	**5348**	**8450**	**5495**	**8355**	**5640**	**8258**	**40**
21	5053	8630	5203	8540	5351	8448	5498	8353	5642	8256	39
22	5055	8628	5205	8539	5353	8446	5500	8352	5645	8254	38
23	5058	8627	5208	8537	5356	8445	5502	8350	5647	8253	37
24	5060	8625	5210	8536	5358	8443	5505	8348	5650	8251	36
25	**5063**	**8624**	**5213**	**8534**	**5361**	**8442**	**5507**	**8347**	**5652**	**8249**	**35**
26	5065	8622	5215	8532	5363	8440	5510	8345	5654	8248	34
27	5068	8621	5218	8531	5366	8439	5512	8344	5657	8246	33
28	5070	8619	5220	8529	5368	8437	5515	8342	5659	8245	32
29	5073	8618	5223	8528	5371	8435	5517	8340	5662	8243	31
30	**5075**	**8616**	**5225**	**8526**	**5373**	**8434**	**5519**	**8339**	**5664**	**8241**	**30**
31	5078	8615	5227	8525	5375	8432	5522	8337	5666	8240	29
32	5080	8613	5230	8523	5378	8431	5524	8336	5669	8238	28
33	5083	8612	5232	8522	5380	8429	5527	8334	5671	8236	27
34	5085	8610	5235	8520	5383	8428	5529	8332	5674	8235	26
35	**5088**	**8609**	**5237**	**8519**	**5385**	**8426**	**5531**	**8331**	**5676**	**8233**	**25**
36	5090	8607	5240	8517	5388	8425	5534	8329	5678	8231	24
37	5093	8606	5242	8516	5390	8423	5536	8328	5681	8230	23
38	5095	8604	5245	8514	5393	8421	5539	8326	5683	8228	22
39	5098	8603	5247	8513	5395	8420	5541	8324	5686	8226	21
40	**5100**	**8601**	**5250**	**8511**	**5398**	**8418**	**5544**	**8323**	**5688**	**8225**	**20**
41	5103	8600	5252	8510	5400	8417	5546	8321	5690	8223	19
42	5105	8599	5255	8508	5402	8415	5548	8320	5693	8221	18
43	5108	8597	5257	8507	5405	8414	5551	8318	5695	8220	17
44	5110	8596	5260	8505	5407	8412	5553	8316	5698	8218	16
45	**5113**	**8594**	**5262**	**8504**	**5410**	**8410**	**5556**	**8315**	**5700**	**8216**	**15**
46	5115	8593	5265	8502	5412	8409	5558	8313	5702	8215	14
47	5118	8591	5267	8500	5415	8407	5561	8311	5705	8213	13
48	5120	8590	5270	8499	5417	8406	5563	8310	5707	8211	12
49	5123	8588	5272	8497	5420	8404	5565	8308	5710	8210	11
50	**5125**	**8587**	**5275**	**8496**	**5422**	**8403**	**5568**	**8307**	**5712**	**8208**	**10**
51	5128	8585	5277	8494	5424	8401	5570	8305	5714	8207	9
52	5130	8584	5279	8493	5427	8399	5573	8303	5717	8205	8
53	5133	8582	5282	8491	5429	8398	5575	8302	5719	8203	7
54	5135	8581	5284	8490	5432	8396	5577	8300	5721	8202	6
55	**5138**	**8579**	**5287**	**8488**	**5434**	**8395**	**5580**	**8299**	**5724**	**8200**	**5**
56	5140	8578	5289	8487	5437	8393	5582	8297	5726	8198	4
57	5143	8576	5292	8485	5439	8391	5585	8295	5729	8197	3
58	5145	8575	5294	8484	5442	8390	5587	8294	5731	8195	2
59	5148	8573	5297	8482	5444	8388	5590	8292	5733	8193	1
60	**5150**	**8572**	**5299**	**8480**	**5446**	**8387**	**5592**	**8290**	**5736**	**8192**	**0**
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0	**5736**	**8192**	**5878**	**8090**	**6018**	**7986**	**6157**	**7880**	**6293**	**7771**	**60**
1	5738	8190	5880	8088	6020	7985	6159	7878	6295	7770	59
2	5741	8188	5883	8087	6023	7983	6161	7877	6298	7768	58
3	5743	8187	5885	8085	6025	7981	6163	7875	6300	7766	57
4	5745	8185	5887	8083	6027	7979	6166	7873	6302	7764	56
5	**5748**	**8183**	**5890**	**8082**	**6030**	**7978**	**6168**	**7871**	**6305**	**7762**	**55**
6	5750	8181	5892	8080	6032	7976	6170	7869	6307	7760	54
7	5752	8180	5894	8078	6034	7974	6173	7868	6309	7759	53
8	5755	8178	5897	8076	6037	7972	6175	7866	6311	7757	52
9	5757	8176	5899	8075	6039	7971	6177	7864	6314	7755	51
10	**5760**	**8175**	**5901**	**8073**	**6041**	**7969**	**6180**	**7862**	**6316**	**7753**	**50**
11	5762	8173	5904	8071	6044	7967	6182	7860	6318	7751	49
12	5764	8171	5906	8070	6046	7965	6184	7859	6320	7749	48
13	5767	8170	5908	8068	6048	7964	6186	7857	6323	7748	47
14	5769	8168	5911	8066	6051	7962	6189	7855	6325	7746	46
15	**5771**	**8166**	**5913**	**8064**	**6053**	**7960**	**6191**	**7853**	**6327**	**7744**	**45**
16	5774	8165	5915	8063	6055	7958	6193	7851	6329	7742	44
17	5776	8163	5918	8061	6058	7956	6196	7850	6332	7740	43
18	5779	8161	5920	8059	6060	7955	6198	7848	6334	7738	42
19	5781	8160	5922	8058	6062	7953	6200	7846	6336	7737	41
20	**5783**	**8158**	**5925**	**8056**	**6065**	**7951**	**6202**	**7844**	**6338**	**7735**	**40**
21	5786	8156	5927	8054	6067	7949	6205	7842	6341	7733	39
22	5788	8155	5930	8052	6069	7948	6207	7841	6343	7731	38
23	5790	8153	5932	8051	6071	7946	6209	7839	6345	7729	37
24	5793	8151	5934	8049	6074	7944	6211	7837	6347	7727	36
25	**5795**	**8150**	**5937**	**8047**	**6076**	**7942**	**6214**	**7835**	**6350**	**7725**	**35**
26	5798	8148	5939	8045	6078	7941	6216	7833	6352	7724	34
27	5800	8146	5941	8044	6081	7939	6218	7832	6354	7722	33
28	5802	8145	5944	8042	6083	7937	6221	7830	6356	7720	32
29	5805	8143	5946	8040	6085	7935	6223	7828	6359	7718	31
30	**5807**	**8141**	**5948**	**8039**	**6088**	**7934**	**6225**	**7826**	**6361**	**7716**	**30**
31	5809	8139	5951	8037	6090	7932	6227	7824	6363	7714	29
32	5812	8138	5953	8035	6092	7930	6230	7822	6365	7713	28
33	5814	8136	5955	8033	6095	7928	6232	7821	6368	7711	27
34	5816	8134	5958	8032	6097	7926	6234	7819	6370	7709	26
35	**5819**	**8133**	**5960**	**8030**	**6099**	**7925**	**6237**	**7817**	**6372**	**7707**	**25**
36	5821	8131	5962	8028	6101	7923	6239	7815	6374	7705	24
37	5824	8129	5965	8026	6104	7921	6241	7813	6376	7703	23
38	5826	8128	5967	8025	6106	7919	6243	7812	6379	7701	22
39	5828	8126	5969	8023	6108	7918	6246	7810	6381	7700	21
40	**5831**	**8124**	**5972**	**8021**	**6111**	**7916**	**6248**	**7808**	**6383**	**7698**	**20**
41	5833	8123	5974	8020	6113	7914	6250	7806	6385	7696	19
42	5835	8121	5976	8018	6115	7912	6252	7804	6388	7694	18
43	5838	8119	5979	8016	6118	7910	6255	7802	6390	7692	17
44	5840	8117	5981	8014	6120	7909	6257	7801	6392	7690	16
45	**5842**	**8116**	**5983**	**8013**	**6122**	**7907**	**6259**	**7799**	**6394**	**7688**	**15**
46	5845	8114	5986	8011	6124	7905	6262	7797	6397	7687	14
47	5847	8112	5988	8009	6127	7903	6264	7795	6399	7685	13
48	5850	8111	5990	8007	6129	7902	6266	7793	6401	7683	12
49	5852	8109	5993	8006	6131	7900	6268	7792	6403	7681	11
50	**5854**	**8107**	**5995**	**8004**	**6134**	**7898**	**6271**	**7790**	**6406**	**7679**	**10**
51	5857	8106	5997	8002	6136	7896	6273	7788	6408	7677	9
52	5859	8104	6000	8000	6138	7894	6275	7786	6410	7675	8
53	5861	8102	6002	7999	6141	7893	6277	7784	6412	7674	7
54	5864	8100	6004	7997	6143	7891	6280	7782	6414	7672	6
55	**5866**	**8099**	**6007**	**7995**	**6145**	**7889**	**6282**	**7781**	**6417**	**7670**	**5**
56	5868	8097	6009	7993	6147	7887	6284	7779	6419	7668	4
57	5871	8095	6011	7992	6150	7885	6286	7777	6421	7666	3
58	5873	8094	6014	7990	6152	7884	6289	7775	6423	7664	2
59	5875	8092	6016	7988	6154	7882	6291	7773	6426	7662	1
60	**5878**	**8090**	**6018**	**7986**	**6157**	**7880**	**6293**	**7771**	**6428**	**7660**	**0**
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	54°		53°		52°		51°		50°		

	40°		41°		42°		43°		44°		
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0	6428	7660	6561	7547	6691	7431	6820	7314	6947	7193	60
1	6430	7659	6563	7545	6693	7430	6822	7312	6949	7191	59
2	6432	7657	6565	7543	6696	7428	6824	7310	6951	7189	58
3	6435	7655	6567	7541	6698	7426	6826	7308	6953	7187	57
4	6437	7653	6569	7539	6700	7424	6828	7306	6955	7185	56
5	6439	7651	6572	7538	6702	7422	6831	7304	6957	7183	55
6	6441	7649	6574	7536	6704	7420	6833	7302	6959	7181	54
7	6443	7647	6576	7534	6706	7418	6835	7300	6961	7179	53
8	6446	7645	6578	7532	6709	7416	6837	7298	6963	7177	52
9	6448	7644	6580	7530	6711	7414	6839	7296	6965	7175	51
10	6450	7642	6583	7528	6713	7412	6841	7294	6967	7173	50
11	6452	7640	6585	7526	6715	7410	6843	7292	6970	7171	49
12	6455	7638	6587	7524	6717	7408	6845	7290	6972	7169	48
13	6457	7636	6589	7522	6719	7406	6848	7288	6974	7167	47
14	6459	7634	6591	7520	6722	7404	6850	7286	6976	7165	46
15	6461	7632	6593	7518	6724	7402	6852	7284	6978	7163	45
16	6463	7630	6596	7516	6726	7400	6854	7282	6980	7161	44
17	6466	7629	6598	7515	6728	7398	6856	7280	6982	7159	43
18	6468	7627	6600	7513	6730	7396	6858	7278	6984	7157	42
19	6470	7625	6602	7511	6732	7394	6860	7276	6986	7155	41
20	6472	7623	6604	7509	6734	7392	6862	7274	6988	7153	40
21	6475	7621	6607	7507	6737	7390	6865	7272	6990	7151	39
22	6477	7619	6609	7505	6739	7388	6867	7270	6992	7149	38
23	6479	7617	6611	7503	6741	7387	6869	7268	6995	7147	37
24	6481	7615	6613	7501	6743	7385	6871	7266	6997	7145	36
25	6483	7613	6615	7499	6745	7383	6873	7264	6999	7143	35
26	6486	7612	6617	7497	6747	7381	6875	7262	7001	7141	34
27	6488	7610	6620	7495	6749	7379	6877	7260	7003	7139	33
28	6490	7608	6622	7493	6752	7377	6879	7258	7005	7137	32
29	6492	7606	6624	7491	6754	7375	6881	7256	7007	7135	31
30	6494	7604	6626	7490	6756	7373	6884	7254	7009	7133	30
31	6497	7602	6628	7488	6758	7371	6886	7252	7011	7130	29
32	6499	7600	6631	7486	6760	7369	6888	7250	7013	7128	28
33	6501	7598	6633	7484	6762	7367	6890	7248	7015	7126	27
34	6503	7596	6635	7482	6764	7365	6892	7246	7017	7124	26
35	6506	7595	6637	7480	6767	7363	6894	7244	7019	7122	25
36	6508	7593	6639	7478	6769	7361	6896	7242	7022	7120	24
37	6510	7591	6641	7476	6771	7359	6898	7240	7024	7118	23
38	6512	7589	6644	7474	6773	7357	6900	7238	7026	7116	22
39	6514	7587	6646	7472	6775	7355	6903	7236	7028	7114	21
40	6517	7585	6648	7470	6777	7353	6905	7234	7030	7112	20
41	6519	7583	6650	7468	6779	7351	6907	7232	7032	7110	19
42	6521	7581	6652	7466	6782	7349	6909	7230	7034	7108	18
43	6523	7579	6654	7464	6784	7347	6911	7228	7036	7106	17
44	6525	7578	6657	7463	6786	7345	6913	7226	7038	7104	16
45	6528	7576	6659	7461	6788	7343	6915	7224	7040	7102	15
46	6530	7574	6661	7459	6790	7341	6917	7222	7042	7100	14
47	6532	7572	6663	7457	6792	7339	6919	7220	7044	7098	13
48	6534	7570	6665	7455	6794	7337	6921	7218	7046	7096	12
49	6536	7568	6667	7453	6797	7335	6924	7216	7048	7094	11
50	6539	7566	6670	7451	6799	7333	6926	7214	7050	7092	10
51	6541	7564	6672	7449	6801	7331	6928	7212	7053	7090	9
52	6543	7562	6674	7447	6803	7329	6930	7210	7055	7088	8
53	6545	7560	6676	7445	6805	7327	6932	7208	7057	7085	7
54	6547	7559	6678	7443	6807	7325	6934	7206	7059	7083	6
55	6550	7557	6680	7441	6809	7323	6936	7203	7061	7081	5
56	6552	7555	6683	7439	6811	7321	6938	7201	7063	7079	4
57	6554	7553	6685	7437	6814	7319	6940	7199	7065	7077	3
58	6556	7551	6687	7435	6816	7318	6942	7197	7067	7075	2
59	6558	7549	6689	7433	6818	7316	6944	7195	7069	7073	1
60	6561	7547	6691	7431	6820	7314	6947	7193	7071	7071	0
′	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin	′
	49°		48°		47°		46°		45°		

	0°		1°		2°		3°		4°		
′	tan	cot	tan	cot	tan	cot	tan	cot	tan	cot	′
0	**0000**	Infinite	**0175**	**57.2900**	**0349**	**28.6363**	**0524**	**19.0811**	**0699**	**14.3007**	**60**
1	0003	3437.75	0177	56.3506	0352	28.3994	0527	18.9755	0702	14.2411	59
2	0006	1718.87	0180	55.4415	0355	28.1664	0530	18.8711	0705	14.1821	58
3	0009	1145.92	0183	54.5613	0358	27.9372	0533	18.7678	0708	14.1235	57
4	0012	859.436	0186	53.7086	0361	27.7117	0536	18.6656	0711	14.0655	56
5	**0015**	**687.549**	**0189**	**52.8821**	**0364**	**27.4899**	**0539**	**18.5645**	**0714**	**14.0079**	**55**
6	0017	572.957	0192	52.0807	0367	27.2715	0542	18.4645	0717	13.9507	54
7	0020	491.106	0195	51.3032	0370	27.0566	0544	18.3655	0720	13.8940	53
8	0023	429.718	0198	50.5485	0373	26.8450	0547	18.2677	0723	13.8378	52
9	0026	381.971	0201	49.8157	0375	26.6367	0550	18.1708	0726	13.7821	51
10	**0029**	**343.774**	**0204**	**49.1039**	**0378**	**26.4316**	**0553**	**18.0750**	**0729**	**13.7267**	**50**
11	0032	312.521	0207	48.4121	0381	26.2296	0556	17.9802	0731	13.6719	49
12	0035	286.478	0209	47.7395	0384	26.0307	0559	17.8863	0734	13.6174	48
13	0038	264.441	0212	47.0853	0387	25.8348	0562	17.7934	0737	13.5634	47
14	0041	245.552	0215	46.4489	0390	25.6418	0565	17.7015	0740	13.5098	46
15	**0044**	**229.182**	**0218**	**45.8294**	**0393**	**25.4517**	**0568**	**17.6106**	**0743**	**13.4566**	**45**
16	0047	214.858	0221	45.2261	0396	25.2644	0571	17.5205	0746	13.4039	44
17	0049	202.219	0224	44.6386	0399	25.0798	0574	17.4314	0749	13.3515	43
18	0052	190.984	0227	44.0661	0402	24.8978	0577	17.3432	0752	13.2996	42
19	0055	180.932	0230	43.5081	0405	24.7185	0580	17.2558	0755	13.2480	41
20	**0058**	**171.885**	**0233**	**42.9641**	**0407**	**24.5418**	**0582**	**17.1693**	**0758**	**13.1969**	**40**
21	0061	163.700	0236	42.4335	0410	24.3675	0585	17.0837	0761	13.1461	39
22	0064	156.259	0239	41.9158	0413	24.1957	0588	16.9990	0764	13.0958	38
23	0067	149.465	0241	41.4106	0416	24.0263	0591	16.9150	0767	13.0458	37
24	0070	143.237	0244	40.9174	0419	23.8593	0594	16.8319	0769	12.9962	36
25	**0073**	**137.507**	**0247**	**40.4358**	**0422**	**23.6945**	**0597**	**16.7496**	**0772**	**12.9469**	**35**
26	0076	132.219	0250	39.9655	0425	23.5321	0600	16.6681	0775	12.8981	34
27	0079	127.321	0253	39.5059	0428	23.3718	0603	16.5874	0778	12.8496	33
28	0081	122.774	0256	39.0568	0431	23.2137	0606	16.5075	0781	12.8014	32
29	0084	118.540	0259	38.6177	0434	23.0577	0609	16.4283	0784	12.7536	31
30	**0087**	**114.589**	**0262**	**38.1885**	**0437**	**22.9038**	**0612**	**16.3499**	**0787**	**12.7062**	**30**
31	0090	110.892	0265	37.7686	0440	22.7519	0615	16.2722	0790	12.6591	29
32	0093	107.426	0268	37.3579	0442	22.6020	0617	16.1952	0793	12.6124	28
33	0096	104.171	0271	36.9560	0445	22.4541	0620	16.1190	0796	12.5660	27
34	0099	101.107	0274	36.5627	0448	22.3081	0623	16.0435	0799	12.5199	26
35	**0102**	**98.2179**	**0276**	**36.1776**	**0451**	**22.1640**	**0626**	**15.9687**	**0802**	**12.4742**	**25**
36	0105	95.4895	0279	35.8006	0454	22.0217	0629	15.8945	0805	12.4288	24
37	0108	92.9085	0282	35.4313	0457	21.8813	0632	15.8211	0808	12.3838	23
38	0111	90.4633	0285	35.0695	0460	21.7426	0635	15.7483	0810	12.3390	22
39	0113	88.1436	0288	34.7151	0463	21.6056	0638	15.6762	0813	12.2946	21
40	**0116**	**85.9398**	**0291**	**34.3678**	**0466**	**21.4704**	**0641**	**15.6048**	**0816**	**12.2505**	**20**
41	0119	83.8435	0294	34.0273	0469	21.3369	0644	15.5340	0819	12.2067	19
42	0122	81.8470	0297	33.6935	0472	21.2049	0647	15.4638	0822	12.1632	18
43	0125	79.9434	0300	33.3662	0475	21.0747	0650	15.3943	0825	12.1201	17
44	0128	78.1263	0303	33.0452	0477	20.9460	0653	15.3254	0828	12.0772	16
45	**0131**	**76.3900**	**0306**	**32.7303**	**0480**	**20.8188**	**0655**	**15.2571**	**0831**	**12.0346**	**15**
46	0134	74.7292	0308	32.4213	0483	20.6932	0658	15.1893	0834	11.9923	14
47	0137	73.1390	0311	32.1181	0486	20.5691	0661	15.1222	0837	11.9504	13
48	0140	71.6151	0314	31.8205	0489	20.4465	0664	15.0557	0840	11.9087	12
49	0143	70.1533	0317	31.5284	0492	20.3253	0667	14.9898	0843	11.8673	11
50	**0146**	**68.7501**	**0320**	**31.2416**	**0495**	**20.2056**	**0670**	**14.9244**	**0846**	**11.8262**	**10**
51	0148	67.4019	0323	30.9599	0498	20.0872	0673	14.8596	0849	11.7853	9
52	0151	66.1055	0326	30.6833	0501	19.9702	0676	14.7954	0851	11.7448	8
53	0154	64.8580	0329	30.4116	0504	19.8546	0679	14.7317	0854	11.7045	7
54	0157	63.6567	0332	30.1446	0507	19.7403	0682	14.6685	0857	11.6645	6
55	**0160**	**62.4992**	**0335**	**29.8823**	**0509**	**19.6273**	**0685**	**14.6059**	**0860**	**11.6248**	**5**
56	0163	61.3829	0338	29.6245	0512	19.5156	0688	14.5438	0863	11.5853	4
57	0166	60.3058	0340	29.3711	0515	19.4051	0690	14.4823	0866	11.5461	3
58	0169	59.2659	0343	29.1220	0518	19.2959	0693	14.4212	0869	11.5072	2
59	0172	58.2612	0346	28.8771	0521	19.1879	0696	14.3607	0872	11.4685	1
60	**0175**	**57.2900**	**0349**	**28.6363**	**0524**	**19.0811**	**0699**	**14.3007**	**0875**	**11.4301**	**0**
′	cot	tan	cot	tan	cot	tan	cot	tan	cot	tan	′
	89°		88°		87°		86°		85°		

	5°		6°		7°		8°		9°		
′	tan	cot	tan	cot	tan	cot	tan	cot	tan	cot	′
0	**0875**	**11.4301**	**1051**	**9.5144**	**1228**	**8.1443**	**1405**	**7.1154**	**1584**	**6.3138**	**60**
1	0878	11.3919	1054	9.4878	1231	8.1248	1408	7.1004	1587	6.3019	59
2	0881	11.3540	1057	9.4614	1234	8.1054	1411	7.0855	1590	6.2901	58
3	0884	11.3163	1060	9.4352	1237	8.0860	1414	7.0706	1593	6.2783	57
4	0887	11.2789	1063	9.4090	1240	8.0667	1417	7.0558	1596	6.2666	56
5	**0890**	**11.2417**	**1066**	**9.3831**	**1243**	**8.0476**	**1420**	**7.0410**	**1599**	**6.2549**	**55**
6	0892	11.2048	1069	9.3572	1246	8.0285	1423	7.0264	1602	6.2432	54
7	0895	11.1681	1072	9.3315	1249	8.0095	1426	7.0117	1605	6.2316	53
8	0898	11.1316	1075	9.3060	1251	7.9906	1429	6.9972	1608	6.2200	52
9	0901	11.0954	1078	9.2806	1254	7.9718	1432	6.9827	1611	6.2085	51
10	**0904**	**11.0594**	**1080**	**9.2553**	**1257**	**7.9530**	**1435**	**6.9682**	**1614**	**6.1970**	**50**
11	0907	11.0237	1083	9.2302	1260	7.9344	1438	6.9538	1617	6.1856	49
12	0910	10.9882	1086	9.2052	1263	7.9158	1441	6.9395	1620	6.1742	48
13	0913	10.9529	1089	9.1803	1266	7.8973	1444	6.9252	1623	6.1628	47
14	0916	10.9178	1092	9.1555	1269	7.8789	1447	6.9110	1626	6.1515	46
15	**0919**	**10.8829**	**1095**	**9.1309**	**1272**	**7.8606**	**1450**	**6.8969**	**1629**	**6.1402**	**45**
16	0922	10.8483	1098	9.1065	1275	7.8424	1453	6.8828	1632	6.1290	44
17	0925	10.8139	1101	9.0821	1278	7.8243	1456	6.8687	1635	6.1178	43
18	0928	10.7797	1104	9.0579	1281	7.8062	1459	6.8548	1638	6.1066	42
19	0931	10.7457	1107	9.0338	1284	7.7883	1462	6.8408	1641	6.0955	41
20	**0934**	**10.7119**	**1110**	**9.0098**	**1287**	**7.7704**	**1465**	**6.8269**	**1644**	**6.0844**	**40**
21	0936	10.6783	1113	8.9860	1290	7.7525	1468	6.8131	1647	6.0734	39
22	0939	10.6450	1116	8.9623	1293	7.7348	1471	6.7994	1650	6.0624	38
23	0942	10.6118	1119	8.9387	1296	7.7171	1474	6.7856	1653	6.0514	37
24	0945	10.5789	1122	8.9152	1299	7.6996	1477	6.7720	1655	6.0405	36
25	**0948**	**10.5462**	**1125**	**8.8919**	**1302**	**7.6821**	**1480**	**6.7584**	**1658**	**6.0296**	**35**
26	0951	10.5136	1128	8.8686	1305	7.6647	1483	6.7448	1661	6.0188	34
27	0954	10.4813	1131	8.8455	1308	7.6473	1486	6.7313	1664	6.0080	33
28	0957	10.4491	1134	8.8225	1311	7.6301	1489	6.7179	1667	5.9972	32
29	0960	10.4172	1136	8.7996	1314	7.6129	1492	6.7045	1670	5.9865	31
30	**0963**	**10.3854**	**1139**	**8.7769**	**1317**	**7.5958**	**1495**	**6.6912**	**1673**	**5.9758**	**30**
31	0966	10.3538	1142	8.7542	1319	7.5787	1497	6.6779	1676	5.9651	29
32	0969	10.3224	1145	8.7317	1322	7.5618	1500	6.6646	1679	5.9545	28
33	0972	10.2913	1148	8.7093	1325	7.5449	1503	6.6514	1682	5.9439	27
34	0975	10.2602	1151	8.6870	1328	7.5281	1506	6.6383	1685	5.9333	26
35	**0978**	**10.2294**	**1154**	**8.6648**	**1331**	**7.5113**	**1509**	**6.6252**	**1688**	**5.9228**	**25**
36	0981	10.1988	1157	8.6427	1334	7.4947	1512	6.6122	1691	5.9124	24
37	0983	10.1683	1160	8.6208	1337	7.4781	1515	6.5992	1694	5.9019	23
38	0986	10.1381	1163	8.5989	1340	7.4615	1518	6.5863	1697	5.8915	22
39	0989	10.1080	1166	8.5772	1343	7.4451	1521	6.5734	1700	5.8811	21
40	**0992**	**10.0780**	**1169**	**8.5555**	**1346**	**7.4287**	**1524**	**6.5606**	**1703**	**5.8708**	**20**
41	0995	10.0483	1172	8.5340	1349	7.4124	1527	6.5478	1706	5.8605	19
42	0998	10.0187	1175	8.5126	1352	7.3962	1530	6.5350	1709	5.8502	18
43	1001	9.9893	1178	8.4913	1355	7.3800	1533	6.5223	1712	5.8400	17
44	1004	9.9601	1181	8.4701	1358	7.3639	1536	6.5097	1715	5.8298	16
45	**1007**	**9.9310**	**1184**	**8.4490**	**1361**	**7.3479**	**1539**	**6.4971**	**1718**	**5.8197**	**15**
46	1010	9.9021	1187	8.4280	1364	7.3319	1542	6.4846	1721	5.8095	14
47	1013	9.8734	1189	8.4071	1367	7.3160	1545	6.4721	1724	5.7994	13
48	1016	9.8448	1192	8.3863	1370	7.3002	1548	6.4596	1727	5.7894	12
49	1019	9.8164	1195	8.3656	1373	7.2844	1551	6.4472	1730	5.7794	11
50	**1022**	**9.7882**	**1198**	**8.3450**	**1376**	**7.2687**	**1554**	**6.4348**	**1733**	**5.7694**	**10**
51	1025	9.7601	1201	8.3245	1379	7.2531	1557	6.4225	1736	5.7594	9
52	1028	9.7322	1204	8.3041	1382	7.2375	1560	6.4103	1739	5.7495	8
53	1030	9.7044	1207	8.2838	1385	7.2220	1563	6.3980	1742	5.7396	7
54	1033	9.6768	1210	8.2636	1388	7.2066	1566	6.3859	1745	5.7297	6
55	**1036**	**9.6499**	**1213**	**8.2434**	**1391**	**7.1912**	**1569**	**6.3737**	**1748**	**5.7199**	**5**
56	1039	9.6220	1216	8.2234	1394	7.1759	1572	6.3617	1751	5.7101	4
57	1042	9.5949	1219	8.2035	1397	7.1607	1575	6.3496	1754	5.7004	3
58	1045	9.5679	1222	8.1837	1399	7.1455	1578	6.3376	1757	5.6906	2
59	1048	9.5411	1225	8.1640	1402	7.1304	1581	6.3257	1760	5.6809	1
60	**1051**	**9.5144**	**1228**	**8.1443**	**1405**	**7.1154**	**1584**	**6.3138**	**1763**	**5.6713**	**0**
′	cot	tan	cot	tan	cot	tan	cot	tan	cot	tan	′
	84°		83°		82°		81°		80°		

	10°		11°		12°		13°		14°		
′	tan	cot	tan	cot	tan	cot	tan	cot	tan	cot	′
0	**1763**	**5.6713**	**1944**	**5.1446**	**2126**	**4.7046**	**2309**	**4.3315**	**2493**	**4.0108**	**60**
1	1766	5.6617	1947	5.1366	2129	4.6979	2312	4.3257	2496	4.0058	59
2	1769	5.6521	1950	5.1286	2132	4.6912	2315	4.3200	2499	4.0009	58
3	1772	5.6425	1953	5.1207	2135	4.6845	2318	4.3143	2503	3.9959	57
4	1775	5.6330	1956	5.1128	2138	4.6779	2321	4.3086	2506	3.9910	56
5	**1778**	**5.6234**	**1959**	**5.1049**	**2141**	**4.6712**	**2324**	**4.3029**	**2509**	**3.9861**	**55**
6	1781	5.6140	1962	5.0970	2144	4.6646	2327	4.2972	2512	3.9812	54
7	1784	5.6045	1965	5.0892	2147	4.6580	2330	4.2916	2515	3.9763	53
8	1787	5.5951	1968	5.0814	2150	4.6514	2333	4.2859	2518	3.9714	52
9	1790	5.5857	1971	5.0736	2153	4.6448	2336	4.2803	2521	3.9665	51
10	**1793**	**5.5764**	**1974**	**5.0658**	**2156**	**4.6382**	**2339**	**4.2747**	**2524**	**3.9617**	**50**
11	1796	5.5671	1977	5.0581	2159	4.6317	2342	4.2691	2527	3.9568	49
12	1799	5.5578	1980	5.0504	2162	4.6252	2345	4.2635	2530	3.9520	48
13	1802	5.5485	1983	5.0427	2165	4.6187	2349	4.2580	2533	3.9471	47
14	1805	5.5393	1986	5.0350	2168	4.6122	2352	4.2524	2537	3.9423	46
15	**1808**	**5.5301**	**1989**	**5.0273**	**2171**	**4.6057**	**2355**	**4.2468**	**2540**	**3.9375**	**45**
16	1811	5.5209	1992	5.0197	2174	4.5993	2358	4.2413	2543	3.9327	44
17	1814	5.5118	1995	5.0121	2177	4.5928	2361	4.2358	2546	3.9279	43
18	1817	5.5026	1998	5.0045	2180	4.5864	2364	4.2303	2549	3.9232	42
19	1820	5.4936	2001	4.9969	2183	4.5800	2367	4.2248	2552	3.9184	41
20	**1823**	**5.4845**	**2004**	**4.9894**	**2186**	**4.5736**	**2370**	**4.2193**	**2555**	**3.9136**	**40**
21	1826	5.4755	2007	4.9819	2189	4.5673	2373	4.2139	2558	3.9089	39
22	1829	5.4665	2010	4.9744	2193	4.5609	2376	4.2084	2561	3.9042	38
23	1832	5.4575	2013	4.9669	2196	4.5546	2379	4.2030	2564	3.8995	37
24	1835	5.4486	2016	4.9594	2199	4.5483	2382	4.1976	2568	3.8947	36
25	**1838**	**5.4397**	**2019**	**4.9520**	**2202**	**4.5420**	**2385**	**4.1922**	**2571**	**3.8900**	**35**
26	1841	5.4308	2022	4.9446	2205	4.5357	2388	4.1868	2574	3.8854	34
27	1844	5.4219	2025	4.9372	2208	4.5294	2392	4.1814	2577	3.8807	33
28	1847	5.4131	2028	4.9298	2211	4 5232	2395	4.1760	2580	3.8760	32
29	1850	5.4043	2031	4.9225	2214	4.5169	2398	4.1706	2583	3.8714	31
30	**1853**	**5.3955**	**2035**	**4.9152**	**2217**	**4.5107**	**2401**	**4.1653**	**2586**	**3.8667**	**30**
31	1856	5.3868	2038	4.9078	2220	4.5045	2404	4.1600	2589	3.8621	29
32	1859	5.3781	2041	4.9006	2223	4.4983	2407	4.1547	2592	3.8575	28
33	1862	5.3694	2044	4.8933	2226	4.4922	2410	4.1493	2595	3.8528	27
34	1865	5.3607	2047	4.8860	2229	4.4860	2413	4.1441	2599	3.8482	26
35	**1868**	**5.3521**	**2050**	**4.8788**	**2232**	**4.4799**	**2416**	**4.1388**	**2602**	**3.8436**	**25**
36	1871	5.3435	2053	4.8716	2235	4.4737	2419	4.1335	2605	3.8391	24
37	1874	5.3349	2056	4.8644	2238	4.4676	2422	4.1282	2608	3.8345	23
38	1877	5.3263	2059	4.8573	2241	4.4615	2425	4.1230	2611	3.8299	22
39	1880	5.3178	2062	4.8501	2244	4.4555	2428	4.1178	2614	3.8254	21
40	**1883**	**5.3093**	**2065**	**4.8430**	**2247**	**4.4494**	**2432**	**4.1126**	**2617**	**3.8208**	**20**
41	1887	5.3008	2068	4.8359	2251	4.4434	2435	4.1074	2620	3.8163	19
42	1890	5.2924	2071	4.8288	2254	4.4374	2438	4.1022	2623	3.8118	18
43	1893	5.2839	2074	4.8218	2257	4.4313	2441	4.0970	2627	3.8073	17
44	1896	5.2755	2077	4.8147	2260	4.4253	2444	4.0918	2630	3.8028	16
45	**1899**	**5.2672**	**2080**	**4.8077**	**2263**	**4.4194**	**2447**	**4.0867**	**2633**	**3.7983**	**15**
46	1902	5.2588	2083	4.8007	2266	4.4134	2450	4.0815	2636	3.7938	14
47	1905	5.2505	2086	4.7937	2269	4.4075	2453	4.0764	2639	3.7893	13
48	1908	5.2422	2089	4.7867	2272	4.4015	2456	4.0713	2642	3.7848	12
49	1911	5.2339	2092	4.7798	2275	4.3956	2459	4.0662	2645	3.7804	11
50	**1914**	**5.2257**	**2095**	**4.7729**	**2278**	**4.3897**	**2462**	**4.0611**	**2648**	**3.7760**	**10**
51	1917	5.2174	2098	4.7659	2281	4.3838	2465	4.0560	2651	3.7715	9
52	1920	5.2092	2101	4.7591	2284	4.3779	2469	4.0509	2655	3.7671	8
53	1923	5.2011	2104	4.7522	2287	4.3721	2472	4.0459	2658	3.7627	7
54	1926	5.1929	2107	4.7453	2290	4.3662	2475	4.0408	2661	3.7583	6
55	**1929**	**5.1848**	**2110**	**4.7385**	**2293**	**4.3604**	**2478**	**4.0358**	**2664**	**3.7539**	**5**
56	1932	5.1767	2113	4.7317	2296	4.3546	2481	4.0308	2667	3.7495	4
57	1935	5.1686	2116	4.7249	2299	4.3488	2484	4.0257	2670	3.7451	3
58	1938	5.1606	2119	4.7181	2303	4.3430	2487	4.0207	2673	3.7408	2
59	1941	5.1526	2123	4.7114	2306	4.3372	2490	4.0158	2676	3.7364	1
60	**1944**	**5.1446**	**2126**	**4.7046**	**2309**	**4.3315**	**2493**	**4.0108**	**2679**	**3.7321**	**0**
′	cot	tan	cot	tan	cot	tan	cot	tan	cot	tan	′
	79°		78°		77°		76°		75°		

	15°		16°		17°		18°		19°		
′	tan	cot	tan	cot	tan	cot	tan	cot	tan	cot	′
0	**2679**	**3.7321**	**2867**	**3.4874**	**3057**	**3.2709**	**3249**	**3.0777**	**3443**	**2.9042**	**60**
1	2683	3.7277	2871	3.4836	3060	3.2675	3252	3.0746	3447	2.9015	59
2	2686	3.7234	2874	3.4798	3064	3.2641	3256	3.0716	3450	2.8987	58
3	2689	3.7191	2877	3.4760	3067	3.2607	3259	3.0686	3453	2.8960	57
4	2692	3.7148	2880	3.4722	3070	3.2573	3262	3.0655	3456	2.8933	56
5	**2695**	**3.7105**	**2883**	**3.4684**	**3073**	**3.2539**	**3265**	**3.0625**	**3460**	**2.8905**	**55**
6	2698	3.7062	2886	3.4646	3076	3.2506	3269	3.0595	3463	2.8878	54
7	2701	3.7019	2890	3.4608	3080	3.2472	3272	3.0565	3466	2.8851	53
8	2704	3.6976	2893	3.4570	3083	3.2438	3275	3.0535	3469	2.8824	52
9	2708	3.6933	2896	3.4533	3086	3.2405	3278	3.0505	3473	2.8797	51
10	**2711**	**3.6891**	**2899**	**3.4495**	**3089**	**3.2371**	**3281**	**3.0475**	**3476**	**2.8770**	**50**
11	2714	3.6848	2902	3.4458	3092	3.2338	3285	3.0445	3479	2.8743	49
12	2717	3.6806	2905	3.4420	3096	3.2305	3288	3.0415	3482	2.8716	48
13	2720	3.6764	2908	3.4383	3099	3.2272	3291	3.0385	3486	2.8689	47
14	2723	3.6722	2912	3.4346	3102	3.2238	3294	3.0356	3489	2.8662	46
15	**2726**	**3.6680**	**2915**	**3.4308**	**3105**	**3.2205**	**3298**	**3.0326**	**3492**	**2.8636**	**45**
16	2729	3.6638	2918	3.4271	3108	3.2172	3301	3.0296	3495	2.8609	44
17	2733	3.6596	2921	3.4234	3111	3.2139	3304	3.0267	3499	2.8582	43
18	2736	3.6554	2924	3.4197	3115	3.2106	3307	3.0237	3502	2.8556	42
19	2739	3.6512	2927	3.4160	3118	3.2073	3310	3.0208	3505	2,8529	41
20	**2742**	**3.6470**	**2931**	**3.4124**	**3121**	**3.2041**	**3314**	**3.0178**	**3508**	**2.8502**	**40**
21	2745	3.6429	2934	3.4087	3124	3.2008	3317	3.0149	3512	2.8476	39
22	2748	3.6387	2937	3.4050	3127	3.1975	3320	3.0120	3515	2.8449	38
23	2751	3.6346	2940	3.4014	3131	3.1943	3323	3.0090	3518	2.8423	37
24	2754	3.6305	2943	3.3977	3134	3.1910	3327	3.0061	3522	2.8397	36
25	**2758**	**3.6264**	**2946**	**3.3941**	**3137**	**3.1878**	**3330**	**3.0032**	**3525**	**2.8370**	**35**
26	2761	3.6222	2949	3.3904	3140	3.1845	3333	3.0003	3528	2.8344	34
27	2764	3.6181	2953	3.3868	3143	3.1813	3336	2.9974	3531	2.8318	33
28	2767	3.6140	2956	3.3832	3147	3.1780	3339	2.9945	3535	2.8291	32
29	2770	3.6100	2959	3.3796	3150	3.1748	3343	2.9916	3538	2.8265	31
30	**2773**	**3.6059**	**2962**	**3.3759**	**3153**	**3.1716**	**3346**	**2.9887**	**3541**	**2.8239**	**30**
31	2776	3.6018	2965	3.3723	3156	3.1684	3349	2.9858	3544	2.8213	29
32	2780	3.5978	2968	3.3687	3159	3.1652	3352	2.9829	3548	2.8187	28
33	2783	3.5937	2972	3.3652	3163	3.1620	3356	2.9800	3551	2.8161	27
34	2786	3.5897	2975	3.3616	3166	3.1588	3359	2.9772	3554	2.8135	26
35	**2789**	**3.5856**	**2978**	**3.3580**	**3169**	**3.1556**	**3362**	**2.9743**	**3558**	**2.8109**	**25**
36	2792	3.5816	2981	3.3544	3172	3.1524	3365	2.9714	3561	2.8083	24
37	2795	3.5776	2984	3.3509	3175	3.1492	3369	2.9686	3564	2.8057	23
38	2798	3.5736	2987	3.3473	3179	3.1460	3372	2.9657	3567	2.8032	22
39	2801	3.5696	2991	3.3438	3182	3.1429	3375	2.9629	3571	2.8006	21
40	**2805**	**3.5656**	**2994**	**3.3402**	**3185**	**3.1397**	**3378**	**2.9600**	**3574**	**2.7980**	**20**
41	2808	3.5616	2997	3.3367	3188	3.1366	3382	2.9572	3577	2.7955	19
42	2811	3.5576	3000	3.3332	3191	3.1334	3385	2.9544	3581	2.7929	18
43	2814	3.5536	3003	3.3297	3195	3.1303	3388	2.9515	3584	2.7903	17
44	2817	3.5497	3006	3.3261	3198	3.1271	3391	2.9487	3587	2.7878	16
45	**2820**	**3.5457**	**3010**	**3.3226**	**3201**	**3.1240**	**3395**	**2.9459**	**3590**	**2.7852**	**15**
46	2823	3.5418	3013	3.3191	3204	3.1209	3398	2.9431	3594	2.7827	14
47	2827	3.5379	3016	3.3156	3207	3.1178	3401	2.9403	3597	2.7801	13
48	2830	3.5339	3019	3.3122	3211	3.1146	3404	2.9375	3600	2.7776	12
49	2833	3.5300	3022	3.3087	3214	3.1115	3408	2.9347	3604	2.7751	11
50	**2836**	**3.5261**	**3026**	**3.3052**	**3217**	**3.1084**	**3411**	**2.9319**	**3607**	**2.7725**	**10**
51	2839	3.5222	3029	3.3017	3220	3.1053	3414	2.9291	3610	2.7700	9
52	2842	3.5183	3032	3.2983	3223	3.1022	3417	2.9263	3613	2.7675	8
53	2845	3.5144	3035	3.2948	3227	3.0991	3421	2.9235	3617	2.7650	7
54	2849	3.5105	3038	3.2914	3230	3.0961	3424	2.9208	3620	2.7625	6
55	**2852**	**3.5067**	**3041**	**3.2880**	**3233**	**3.0930**	**3427**	**2.9180**	**3623**	**2.7600**	**5**
56	2855	3.5028	3045	3.2845	3236	3.0899	3430	2.9152	3627	2.7575	4
57	2858	3.4989	3048	3.2811	3240	3.0868	3434	2.9125	3630	2.7550	3
58	2861	3,4951	3051	3.2777	3243	3.0838	3437	2.9097	3633	2.7525	2
59	2864	3.4912	3054	3.2743	3246	3.0807	3440	2.9070	3636	2.7500	1
60	**2867**	**3.4874**	**3057**	**3.2709**	**3249**	**3.0777**	**3443**	**2.9042**	**3640**	**2.7475**	**0**
′	cot	tan	cot	tan	cot	tan	cot	tan	cot	tan	′
	74°		73°		72°		71°		70°		

	20°		21°		22°		23°		24°		
′	tan	cot	tan	cot	tan	cot	tan	cot	tan	cot	′
0	**3640**	**2.7475**	**3839**	**2.6051**	**4040**	**2.4751**	**4245**	**2.3559**	**4452**	**2.2460**	**60**
1	3643	2.7450	3842	2.6028	4044	2.4730	4248	2.3539	4456	2.2443	59
2	3646	2.7425	3845	2.6006	4047	2.4709	4252	2.3520	4459	2.2425	58
3	3650	2.7400	3849	2.5983	4050	2.4689	4255	2.3501	4463	2.2408	57
4	3653	2.7376	3852	2.5961	4054	2.4668	4258	2.3483	4466	2.2390	56
5	**3656**	**2.7351**	**3855**	**2.5938**	**4057**	**2.4648**	**4262**	**2.3464**	**4470**	**2.2373**	**55**
6	3659	2.7326	3859	2.5916	4061	2.4627	4265	2.3445	4473	2.2355	54
7	3663	2.7302	3862	2.5893	4064	2.4606	4269	2.3426	4477	2.2338	53
8	3666	2.7277	3865	2.5871	4067	2.4586	4272	2.3407	4480	2.2320	52
9	3669	2.7253	3869	2.5848	4071	2.4566	4276	2.3388	4484	2.2303	51
10	**3673**	**2.7228**	**3872**	**2.5826**	**4074**	**2.4545**	**4279**	**2.3369**	**4487**	**2.2286**	**50**
11	3676	2.7204	3875	2.5804	4078	2.4525	4283	2.3351	4491	2.2268	49
12	3679	2.7179	3879	2.5782	4081	2.4504	4286	2.3332	4494	2.2251	48
13	3683	2.7155	3882	2.5759	4084	2.4484	4289	2.3313	4498	2.2234	47
14	3686	2.7130	3885	2.5737	4088	2.4464	4293	2.3294	4501	2.2216	46
15	**3689**	**2.7106**	**3889**	**2.5715**	**4091**	**2.4443**	**4296**	**2.3276**	**4505**	**2.2199**	**45**
16	3693	2.7082	3892	2.5693	4095	2.4423	4300	2.3257	4508	2.2182	44
17	3696	2.7058	3895	2.5671	4098	2.4403	4303	2.3238	4512	2.2165	43
18	3699	2.7034	3899	2.5649	4101	2.4383	4307	2.3220	4515	2.2148	42
19	3702	2.7009	3902	2.5627	4105	2.4362	4310	2.3201	4519	2.2130	41
20	**3706**	**2.6985**	**3906**	**2.5605**	**4108**	**2.4342**	**4314**	**2.3183**	**4522**	**2.2113**	**40**
21	3709	2.6961	3909	2.5583	4111	2.4322	4317	2.3164	4526	2.2096	39
22	3712	2.6937	3912	2.5561	4115	2.4302	4320	2.3146	4529	2.2079	38
23	3716	2.6913	3916	2.5539	4118	2.4282	4324	2.3127	4533	2.2062	37
24	3719	2.6889	3919	2.5517	4122	2.4262	4327	2.3109	4536	2.2045	36
25	**3722**	**2.6865**	**3922**	**2.5495**	**4125**	**2.4242**	**4331**	**2.3090**	**4540**	**2.2028**	**35**
26	3726	2.6841	3926	2.5473	4129	2.4222	4334	2.3072	4543	2.2011	34
27	3729	2.6818	3929	2.5452	4132	2.4202	4338	2.3053	4547	2.1994	33
28	3732	2.6794	3932	2.5430	4135	2.4182	4341	2.3035	4550	2.1977	32
29	3736	2.6770	3936	2.5408	4139	2.4162	4345	2.3017	4554	2.1960	31
30	**3739**	**2.6746**	**3939**	**2.5386**	**4142**	**2.4142**	**4348**	**2.2998**	**4557**	**2.1943**	**30**
31	3742	2.6723	3942	2.5365	4146	2.4122	4352	2.2980	4561	2.1926	29
32	3745	2.6699	3946	2.5343	4149	2.4102	4355	2.2962	4564	2.1909	28
33	3749	2.6675	3949	2.5322	4152	2.4083	4359	2.2944	4568	2.1892	27
34	3752	2.6652	3953	2.5300	4156	2.4063	4362	2.2925	4571	2.1876	26
35	**3755**	**2.6628**	**3956**	**2.5279**	**4159**	**2.4043**	**4365**	**2.2907**	**4575**	**2.1859**	**25**
36	3759	2.6605	3959	2.5257	4163	2.4023	4369	2.2889	4578	2.1842	24
37	3762	2.6581	3963	2.5236	4166	2.4004	4372	2.2871	4582	2.1825	23
38	3765	2.6558	3966	2.5214	4169	2.3984	4376	2.2853	4585	2.1808	22
39	3769	2.6534	3969	2.5193	4173	2.3964	4379	2.2835	4589	2.1792	21
40	**3772**	**2.6511**	**3973**	**2.5172**	**4176**	**2.3945**	**4383**	**2.2817**	**4592**	**2.1775**	**20**
41	3775	2.6488	3976	2.5150	4180	2.3925	4386	2.2799	4596	2.1758	19
42	3779	2.6464	3979	2.5129	4183	2.3906	4390	2.2781	4599	2.1742	18
43	3782	2.6441	3983	2.5108	4187	2.3886	4393	2.2763	4603	2.1725	17
44	3785	2.6418	3986	2.5086	4190	2.3867	4397	2.2745	4607	2.1708	16
45	**3789**	**2.6395**	**3990**	**2.5065**	**4193**	**2.3847**	**4400**	**2.2727**	**4610**	**2.1692**	**15**
46	3792	2.6371	3993	2.5044	4197	2.3828	4404	2.2709	4614	2.1675	14
47	3795	2.6348	3996	2.5023	4200	2.3808	4407	2.2691	4617	2.1659	13
48	3799	2.6325	4000	2.5002	4204	2.3789	4411	2.2673	4621	2.1642	12
49	3802	2.6302	4003	2.4981	4207	2.3770	4414	2.2655	4624	2.1625	11
50	**3805**	**2.6279**	**4006**	**2.4960**	**4210**	**2.3750**	**4417**	**2.2637**	**4628**	**2.1609**	**10**
51	3809	2.6256	4010	2.4939	4214	2.3731	4421	2.2620	4631	2.1592	9
52	3812	2.6233	4013	2.4918	4217	2.3712	4424	2.2602	4635	2.1576	8
53	3815	2.6210	4017	2.4897	4221	2.3693	4428	2.2584	4638	2.1560	7
54	3819	2.6187	4020	2.4876	4224	2.3673	4431	2.2566	4642	2.1543	6
55	**3822**	**2.6165**	**4023**	**2.4855**	**4228**	**2.3654**	**4435**	**2.2549**	**4645**	**2.1527**	**5**
56	3825	2.6142	4027	2.4834	4231	2.3635	4438	2.2531	4649	2.1510	4
57	3829	2.6119	4030	2.4813	4234	2.3616	4442	2.2513	4652	2.1494	3
58	3832	2.6096	4033	2.4792	4238	2.3597	4445	2.2496	4656	2.1478	2
59	3835	2.6074	4037	2.4772	4241	2.3578	4449	2.2478	4660	2.1461	1
60	**3839**	**2.6051**	**4040**	**2.4751**	**4245**	**2.3559**	**4452**	**2.2460**	**4663**	**2.1445**	**0**
′	cot	tan	cot	tan	cot	tan	cot	tan	cot	tan	′
	69°		68°		67°		66°		65°		

	25°		26°		27°		28°		29°		
′	tan	cot	tan	cot	tan	cot	tan	cot	tan	cot	′
0	**4663**	**2.1445**	**4877**	**2.0503**	**5095**	**1.9626**	**5317**	**1.8807**	**5543**	**1.8040**	**60**
1	4667	2.1429	4881	2.0488	5099	1.9612	5321	1.8794	5547	1.8028	59
2	4670	2.1413	4885	2.0473	5103	1.9598	5325	1.8781	5551	1.8016	58
3	4674	2.1396	4888	2.0458	5106	1.9584	5328	1.8768	5555	1.8003	57
4	4677	2.1380	4892	2.0443	5110	1.9570	5332	1.8755	5558	1.7991	56
5	**4681**	**2.1364**	**4895**	**2.0428**	**5114**	**1.9556**	**5336**	**1.8741**	**5562**	**1.7979**	**55**
6	4684	2.1348	4899	2.0413	5117	1.9542	5340	1.8728	5566	1.7966	54
7	4688	2.1332	4903	2.0398	5121	1.9528	5343	1.8715	5570	1.7954	53
8	4691	2.1315	4906	2.0383	5125	1.9514	5347	1.8702	5574	1.7942	52
9	4695	2.1299	4910	2.0368	5128	1.9500	5351	1.8689	5577	1.7930	51
10	**4699**	**2.1283**	**4913**	**2.0353**	**5132**	**1.9486**	**5354**	**1.8676**	**5581**	**1.7917**	**50**
11	4702	2.1267	4917	2.0338	5136	1.9472	5358	1.8663	5585	1.7905	49
12	4706	2.1251	4921	2.0323	5139	1.9458	5362	1.8650	5589	1.7893	48
13	4709	2.1235	4924	2.0308	5143	1.9444	5366	1.8637	5593	1.7881	47
14	4713	2.1219	4928	2.0293	5147	1.9430	5369	1.8624	5596	1.7868	46
15	**4716**	**2.1203**	**4931**	**2.0278**	**5150**	**1.9416**	**5373**	**1.8611**	**5600**	**1.7856**	**45**
16	4720	2.1187	4935	2.0263	5154	1.9402	5377	1.8598	5604	1.7844	44
17	4723	2.1171	4939	2.0248	5158	1.9388	5381	1.8585	5608	1.7832	43
18	4727	2.1155	4942	2.0233	5161	1.9375	5384	1.8572	5612	1.7820	42
19	4731	2.1139	4946	2.0219	5165	1.9361	5388	1.8559	5616	1.7808	41
20	**4734**	**2.1123**	**4950**	**2.0204**	**5169**	**1.9347**	**5392**	**1.8546**	**5619**	**1.7796**	**40**
21	4738	2.1107	4953	2.0189	5172	1.9333	5396	1.8533	5623	1.7783	39
22	4741	2.1092	4957	2.0174	5176	1.9319	5399	1.8520	5627	1.7771	38
23	4745	2.1076	4960	2.0160	5180	1.9306	5403	1.8507	5631	1.7759	37
24	4748	2.1060	4964	2.0145	5184	1.9292	5407	1.8495	5635	1.7747	36
25	**4752**	**2.1044**	**4968**	**2.0130**	**5187**	**1.9278**	**5411**	**1.8482**	**5639**	**1.7735**	**35**
26	4755	2.1028	4971	2.0115	5191	1.9265	5415	1.8469	5642	1.7723	34
27	4759	2.1013	4975	2.0101	5195	1.9251	5418	1.8456	5646	1.7711	33
28	4763	2.0997	4979	2.0086	5198	1.9237	5422	1.8443	5650	1.7699	32
29	4766	2.0981	4982	2.0072	5202	1.9223	5426	1.8430	5654	1.7687	31
30	**4770**	**2.0965**	**4986**	**2.0057**	**5206**	**1.9210**	**5430**	**1.8418**	**5658**	**1.7675**	**30**
31	4773	2.0950	4989	2.0042	5209	1.9196	5433	1.8405	5662	1.7663	29
32	4777	2.0934	4993	2.0028	5213	1.9183	5437	1.8392	5665	1.7651	28
33	4780	2.0918	4997	2.0013	5217	1.9169	5441	1.8379	5669	1.7639	27
34	4784	2.0903	5000	1.9999	5220	1.9155	5445	1.8367	5673	1.7627	26
35	**4788**	**2.0887**	**5004**	**1.9984**	**5224**	**1.9142**	**5448**	**1.8354**	**5677**	**1.7615**	**25**
36	4791	2,0872	5008	1.9970	5228	1.9128	5452	1.8341	5681	1.7603	24
37	4795	2.0856	5011	1.9955	5232	1.9115	5456	1.8329	5685	1.7591	23
38	4798	2.0840	5015	1.9941	5235	1.9101	5460	1.8316	5688	1.7579	22
39	4802	2.0825	5019	1.9926	5239	1.9088	5464	1.8303	5692	1.7567	21
40	**4806**	**2.0809**	**5022**	**1.9912**	**5243**	**1.9074**	**5467**	**1.8291**	**5696**	**1.7556**	**20**
41	4809	2.0794	5026	1.9897	5246	1.9061	5471	1.8278	5700	1.7544	19
42	4813	2.0778	5029	1.9883	5250	1.9047	5475	1.8265	5704	1.7532	18
43	4816	2.0763	5033	1.9868	5254	1.9034	5479	1.8253	5708	1.7520	17
44	4820	2.0748	5037	1.9854	5258	1.9020	5482	1.8240	5712	1.7508	16
45	**4823**	**2.0732**	**5040**	**1.9840**	**5261**	**1.9007**	**5486**	**1.8228**	**5715**	**1.7496**	**15**
46	4827	2.0717	5044	1.9825	5265	1.8993	5490	1.8215	5719	1.7485	14
47	4831	2.0701	5048	1.9811	5269	1.8980	5494	1.8202	5723	1.7473	13
48	4834	2.0686	5051	1.9797	5272	1.8967	5498	1.8190	5727	1.7461	12
49	4838	2.0671	5055	1.9782	5276	1.8953	5501	1.8177	5731	1.7449	11
50	**4841**	**2.0655**	**5059**	**1.9768**	**5280**	**1.8940**	**5505**	**1.8165**	**5735**	**1.7437**	**10**
51	4845	2.0640	5062	1.9754	5284	1.8927	5509	1.8152	5739	1.7426	9
52	4849	2.0625	5066	1.9740	5287	1.8913	5513	1.8140	5743	1.7414	8
53	4852	2.0609	5070	1.9725	5291	1.8900	5517	1.8127	5746	1.7402	7
54	4856	2.0594	5073	1.9711	5295	1.8887	5520	1.8115	5750	1.7391	6
55	**4859**	**2.0579**	**5077**	**1.9697**	**5298**	**1.8873**	**5524**	**1.8103**	**5754**	**1.7379**	**5**
56	4863	2.0564	5081	1.9683	5302	1.8860	5528	1.8090	5758	1.7367	4
57	4867	2.0549	5084	1.9669	5306	1.8847	5532	1.8078	5762	1.7355	3
58	4870	2.0533	5088	1.9654	5310	1.8834	5535	1.8065	5766	1.7344	2
59	4874	2.0518	5092	1.9640	5313	1.8820	5539	1.8053	5770	1.7332	1
60	**4877**	**2.0503**	**5095**	**1.9626**	**5317**	**1.8807**	**5543**	**1.8040**	**5774**	**1.7321**	**0**
′	cot	tan	cot	tan	cot	tan	cot	tan	cot	tan	′
	64°		63°		62°		61°		60°		

	30°		**31°**		**32°**		**33°**		**34°**		
′	**tan**	**cot**	**tan**	**cot**	**tan**	**cot**	**tan**	**cot**	**tan**	**cot**	**′**
0	**5774**	**1.7321**	**6009**	**1.6643**	**6249**	**1.6003**	**6494**	**1.5399**	**6745**	**1.4826**	**60**
1	5777	1.7309	6013	1.6632	6253	1.5993	6498	1.5389	6749	1.4816	59
2	5781	1.7297	6017	1.6621	6257	1.5983	6502	1.5379	6754	1.4807	58
3	5785	1.7286	6020	1.6610	6261	1.5972	6506	1.5369	6758	1.4798	57
4	5789	1.7274	6024	1.6599	6265	1.5962	6511	1.5359	6762	1.4788	56
5	**5793**	**1.7262**	**6028**	**1.6588**	**6269**	**1.5952**	**6515**	**1.5350**	**6766**	**1.4779**	**55**
6	5797	1.7251	6032	1.6577	6273	1.5941	6519	1.5340	6771	1.4770	54
7	5801	1.7239	6036	1.6566	6277	1.5931	6523	1.5330	6775	1.4761	53
8	5805	1.7228	6040	1.6555	6281	1.5921	6527	1.5320	6779	1.4751	52
9	5808	1.7216	6044	1.6545	6285	1.5911	6531	1.5311	6783	1.4742	51
10	**5812**	**1.7205**	**6048**	**1.6534**	**6289**	**1.5900**	**6536**	**1.5301**	**6787**	**1.4733**	**50**
11	5816	1.7193	6052	1.6523	6293	1.5890	6540	1.5291	6792	1.4724	49
12	5820	1.7182	6056	1.6512	6297	1.5880	6544	1.5282	6796	1.4715	48
13	5824	1.7170	6060	1.6501	6301	1.5869	6548	1.5272	6800	1.4705	47
14	5828	1.7159	6064	1.6490	6305	1.5859	6552	1.5262	6805	1.4696	46
15	**5832**	**1.7147**	**6068**	**1.6479**	**6310**	**1.5849**	**6556**	**1.5253**	**6809**	**1.4687**	**45**
16	5836	1.7136	6072	1.6469	6314	1.5839	6560	1.5243	6813	1.4678	44
17	5840	1.7124	6076	1.6458	6318	1.5829	6565	1.5233	6817	1.4669	43
18	5844	1.7113	6080	1.6447	6322	1.5818	6569	1.5224	6822	1.4659	42
19	5847	1.7102	6084	1.6436	6326	1.5808	6573	1.5214	6826	1.4650	41
20	**5851**	**1.7090**	**6088**	**1.6426**	**6330**	**1.5798**	**6577**	**1.5204**	**6830**	**1.4641**	**40**
21	5855	1.7079	6092	1.6415	6334	1.5788	6581	1.5195	6834	1.4632	39
22	5859	1.7067	6096	1.6404	6338	1.5778	6585	1.5185	6839	1.4623	38
23	5863	1.7056	6100	1.6393	6342	1.5768	6590	1.5175	6843	1.4614	37
24	5867	1.7045	6104	1.6383	6346	1.5757	6594	1.5166	6847	1.4605	36
25	**5871**	**1.7033**	**6108**	**1.6372**	**6350**	**1.5747**	**6598**	**1.5156**	**6851**	**1.4596**	**35**
26	5875	1.7022	6112	1.6361	6354	1.5737	6602	1.5147	6856	1.4586	34
27	5879	1.7011	6116	1.6351	6358	1.5727	6606	1.5137	6860	1.4577	33
28	5883	1.6999	6120	1.6340	6363	1.5717	6610	1.5127	6864	1.4568	32
29	5887	1.6988	6124	1.6329	6367	1.5707	6615	1.5118	6869	1.4559	31
30	**5890**	**1.6977**	**6128**	**1.6319**	**6371**	**1.5697**	**6619**	**1.5108**	**6873**	**1.4550**	**30**
31	5894	1.6965	6132	1.6308	6375	1.5687	6623	1.5099	6877	1.4541	29
32	5898	1.6954	6136	1.6297	6379	1.5677	6627	1.5089	6881	1.4532	28
33	5902	1.6943	6140	1.6287	6383	1.5667	6631	1.5080	6886	1.4523	27
34	5906	1.6932	6144	1.6276	6387	1.5657	6636	1.5070	6890	1.4514	26
35	**5910**	**1.6920**	**6148**	**1.6265**	**6391**	**1.5647**	**6640**	**1.5061**	**6894**	**1.4505**	**25**
36	5914	1.6909	6152	1.6255	6395	1.5637	6644	1.5051	6899	1.4496	24
37	5918	1.6898	6156	1.6244	6399	1.5627	6648	1.5042	6903	1.4487	23
38	5922	1.6887	6160	1.6234	6403	1.5617	6652	1.5032	6907	1.4478	22
39	5926	1.6875	6164	1.6223	6408	1.5607	6657	1.5023	6911	1.4469	21
40	**5930**	**1.6864**	**6168**	**1.6212**	**6412**	**1.5597**	**6661**	**1.5013**	**6916**	**1.4460**	**20**
41	5934	1.6853	6172	1.6202	6416	1.5587	6665	1.5004	6920	1.4451	19
42	5938	1.6842	6176	1.6191	6420	1.5577	6669	1.4994	6924	1.4442	18
43	5942	1.6831	6180	1.6181	6424	1.5567	6673	1.4985	6929	1.4433	17
44	5945	1.6820	6184	1.6170	6428	1.5557	6678	1.4975	6933	1.4424	16
45	**5949**	**1.6808**	**6188**	**1.6160**	**6432**	**1.5547**	**6682**	**1.4966**	**6937**	**1.4415**	**15**
46	5953	1.6797	6192	1.6149	6436	1.5537	6686	1.4957	6942	1.4406	14
47	5957	1.6786	6196	1.6139	6440	1.5527	6690	1.4947	6946	1.4397	13
48	5961	1.6775	6200	1.6128	6445	1.5517	6694	1.4938	6950	1.4388	12
49	5965	1.6764	6204	1.6118	6449	1.5507	6699	1.4928	6954	1.4379	11
50	**5969**	**1.6753**	**6208**	**1.6107**	**6453**	**1.5497**	**6703**	**1.4919**	**6959**	**1.4370**	**10**
51	5973	1.6742	6212	1.6097	6457	1.5487	6707	1.4910	6963	1.4361	9
52	5977	1.6731	6216	1.6087	6461	1.5477	6711	1.4900	6967	1.4352	8
53	5981	1.6720	6220	1.6076	6465	1.5468	6716	1.4891	6972	1.4344	7
54	5985	1.6709	6224	1.6066	6469	1.5458	6720	1.4882	6976	1.4335	6
55	**5989**	**1.6698**	**6228**	**1.6055**	**6473**	**1.5448**	**6724**	**1.4872**	**6980**	**1.4326**	**5**
56	5993	1.6687	6233	1.6045	6478	1.5438	6728	1.4863	6985	1.4317	4
57	5997	1.6676	6237	1.6034	6482	1.5428	6732	1.4854	6989	1.4308	3
58	6001	1.6665	6241	1.6024	6486	1.5418	6737	1.4844	6993	1.4299	2
59	6005	1.6654	6245	1.6014	6490	1.5408	6741	1.4835	6998	1.4290	1
60	**6009**	**1.6643**	**6249**	**1.6003**	**6494**	**1.5399**	**6745**	**1.4826**	**7002**	**1.4281**	**0**
′	**cot**	**tan**	**cot**	**tan**	**cot**	**tan**	**cot**	**tan**	**cot**	**tan**	**′**
	59°		**58°**		**57°**		**56°**		**55°**		

	35°		36°		37°		38°		39°		
′	tan	cot	tan	cot	tan	cot	tan	cot	tan	cot	′
0	**7002**	**1.4281**	**7265**	**1.3764**	**7536**	**1.3270**	**7813**	**1.2799**	**8098**	**1.2349**	**60**
1	7006	1.4273	7270	1.3755	7540	1.3262	7818	1.2792	8103	1.2342	59
2	7011	1.4264	7274	1.3747	7545	1.3254	7822	1.2784	8107	1.2334	58
3	7015	1.4255	7279	1.3739	7549	1.3246	7827	1.2776	8112	1.2327	57
4	7019	1.4246	7283	1.3730	7554	1.3238	7832	1.2769	8117	1.2320	56
5	**7024**	**1.4237**	**7288**	**1.3722**	**7558**	**1.3230**	**7836**	**1.2761**	**8122**	**1.2312**	**55**
6	7028	1.4229	7292	1.3713	7563	1.3222	7841	1.2753	8127	1.2305	54
7	7032	1.4220	7297	1.3705	7568	1.3214	7846	1.2746	8132	1.2298	53
8	7037	1.4211	7301	1.3697	7572	1.3206	7850	1.2738	8136	1.2290	52
9	7041	1.4202	7306	1.3688	7577	1.3198	7855	1.2731	8141	1.2283	51
10	**7046**	**1.4193**	**7310**	**1.3680**	**7581**	**1.3190**	**7860**	**1.2723**	**8146**	**1.2276**	**50**
11	7050	1.4185	7314	1.3672	7586	1.3182	7865	1.2715	8151	1.2268	49
12	7054	1.4176	7319	1.3663	7590	1.3175	7869	1.2708	8156	1.2261	48
13	7059	1.4167	7323	1.3655	7595	1.3167	7874	1.2700	8161	1.2254	47
14	7063	1.4158	7328	1.3647	7600	1.3159	7879	1.2693	8165	1.2247	46
15	**7067**	**1.4150**	**7332**	**1.3638**	**7604**	**1.3151**	**7883**	**1.2685**	**8170**	**1.2239**	**45**
16	7072	1.4141	7337	1.3630	7609	1.3143	7888	1.2677	8175	1.2232	44
17	7076	1.4132	7341	1.3622	7613	1.3135	7893	1.2670	8180	1.2225	43
18	7080	1.4124	7346	1.3613	7618	1.3127	7898	1.2662	8185	1.2218	42
19	7085	1.4115	7350	1.3605	7623	1.3119	7902	1.2655	8190	1.2210	41
20	**7089**	**1.4106**	**7355**	**1.3597**	**7627**	**1.3111**	**7907**	**1.2647**	**8195**	**1.2203**	**40**
21	7094	1.4097	7359	1.3588	7632	1.3103	7912	1.2640	8199	1.2196	39
22	7098	1.4089	7364	1.3580	7636	1.3095	7916	1.2632	8204	1.2189	38
23	7102	1.4080	7368	1.3572	7641	1.3087	7921	1.2624	8209	1.2181	37
24	7107	1.4071	7373	1.3564	7646	1.3079	7926	1.2617	8214	1.2174	36
25	**7111**	**1.4063**	**7377**	**1.3555**	**7650**	**1.3072**	**7931**	**1.2609**	**8219**	**1.2167**	**35**
26	7115	1.4054	7382	1.3547	7655	1.3064	7935	1.2602	8224	1.2160	34
27	7120	1.4045	7386	1.3539	7659	1.3056	7940	1.2594	8229	1.2153	33
28	7124	1.4037	7391	1.3531	7664	1.3048	7945	1.2587	8234	1.2145	32
29	7129	1.4028	7395	1.3522	7669	1.3040	7950	1.2579	8238	1.2138	31
30	**7133**	**1.4019**	**7400**	**1.3514**	**7673**	**1.3032**	**7954**	**1.2572**	**8243**	**1.2131**	**30**
31	7137	1.4011	7404	1.3506	7678	1.3024	7959	1.2564	8248	1.2124	29
32	7142	1.4002	7409	1.3498	7683	1.3017	7964	1.2557	8253	1.2117	28
33	7146	1.3994	7413	1.3490	7687	1.3009	7969	1.2549	8258	1.2109	27
34	7151	1.3985	7418	1.3481	7692	1.3001	7973	1.2542	8263	1.2102	26
35	**7155**	**1.3976**	**7422**	**1.3473**	**7696**	**1.2993**	**7978**	**1.2534**	**8268**	**1.2095**	**25**
36	7159	1.3968	7427	1.3465	7701	1.2985	7983	1.2527	8273	1.2088	24
37	7164	1.3959	7431	1.3457	7706	1.2977	7988	1.2519	8278	1.2081	23
38	7168	1.3951	7436	1.3449	7710	1.2970	7992	1.2512	8283	1.2074	22
39	7173	1.3942	7440	1.3440	7715	1.2962	7997	1.2504	8287	1.2066	21
40	**7177**	**1.3934**	**7445**	**1.3432**	**7720**	**1.2954**	**8002**	**1.2497**	**8292**	**1.2059**	**20**
41	7181	1.3925	7449	1.3424	7724	1.2946	8007	1.2489	8297	1.2052	19
42	7186	1.3916	7454	1.3416	7729	1.2938	8012	1.2482	8302	1.2045	18
43	7190	1.3908	7458	1.3408	7734	1.2931	8016	1.2475	8307	1.2038	17
44	7195	1.3899	7463	1.3400	7738	1.2923	8021	1.2467	8312	1.2031	16
45	**7199**	**1.3891**	**7467**	**1.3392**	**7743**	**1.2915**	**8026**	**1.2460**	**8317**	**1.2024**	**15**
46	7203	1.3882	7472	1.3384	7747	1.2907	8031	1.2452	8322	1.2017	14
47	7208	1.3874	7476	1.3375	7752	1.2900	8035	1.2445	8327	1.2009	13
48	7212	1.3865	7481	1.3367	7757	1.2892	8040	1.2437	8332	1.2002	12
49	7217	1.3857	7485	1.3359	7761	1.2884	8045	1.2430	8337	1.1995	11
50	**7221**	**1.3848**	**7490**	**1.3351**	**7766**	**1.2876**	**8050**	**1.2423**	**8342**	**1.1988**	**10**
51	7226	1.3840	7495	1.3343	7771	1.2869	8055	1.2415	8346	1.1981	9
52	7230	1.3831	7499	1.3335	7775	1.2861	8059	1.2408	8351	1.1974	8
53	7234	1.3823	7504	1.3327	7780	1.2853	8064	1.2401	8356	1.1967	7
54	7239	1.3814	7508	1.3319	7785	1.2846	8069	1.2393	8361	1.1960	6
55	**7243**	**1.3806**	**7513**	**1.3311**	**7789**	**1.2838**	**8074**	**1.2386**	**8366**	**1.1953**	**5**
56	7248	1.3798	7517	1.3303	7794	1.2830	8079	1.2378	8371	1.1946	4
57	7252	1.3789	7522	1.3295	7799	1.2822	8083	1.2371	8376	1.1939	3
58	7257	1.3781	7526	1.3287	7803	1.2815	8088	1.2364	8381	1.1932	2
59	7261	1.3772	7531	1.3278	7808	1.2807	8093	1.2356	8386	1.1925	1
60	**7265**	**1.3764**	**7536**	**1.3270**	**7813**	**1.2799**	**8098**	**1.2349**	**8391**	**1.1918**	**0**
′	cot	tan	cot	tan	cot	tan	cot	tan	cot	tan	′
	54°		53°		52°		51°		50°		

	40°		41°		42°		43°		44°		
′	tan	cot	tan	cot	tan	cot	tan	cot	tan	cot	′
0	8391	1.1918	8693	1.1504	9004	1.1106	9325	1.0724	9657	1.0355	60
1	8396	1.1910	8698	1.1497	9009	1.1100	9331	1.0717	9663	1.0349	59
2	8401	1.1903	8703	1.1490	9015	1.1093	9336	1.0711	9668	1.0343	58
3	8406	1.1896	8708	1.1483	9020	1.1087	9341	1.0705	9674	1.0337	57
4	8411	1.1889	8713	1.1477	9025	1.1080	9347	1.0699	9679	1.0331	56
5	8416	1.1882	8718	1.1470	9030	1.1074	9352	1.0692	9685	1.0325	55
6	8421	1.1875	8724	1.1463	9036	1.1067	9358	1.0686	9691	1.0319	54
7	8426	1.1868	8729	1.1456	9041	1.1061	9363	1.0680	9696	1.0313	53
8	8431	1.1861	8734	1.1450	9046	1.1054	9369	1.0674	9702	1.0307	52
9	8436	1.1854	8739	1.1443	9052	1.1048	9374	1.0668	9708	1.0301	51
10	8441	1.1847	8744	1.1436	9057	1.1041	9380	1.0661	9713	1.0295	50
11	8446	1.1840	8749	1.1430	9062	1.1035	9385	1.0655	9719	1.0289	49
12	8451	1.1833	8754	1.1423	9067	1.1028	9391	1.0649	9725	1.0283	48
13	8456	1.1826	8759	1.1416	9073	1.1022	9396	1.0643	9730	1.0277	47
14	8461	1.1819	8765	1.1410	9078	1.1016	9402	1.0637	9736	1.0271	46
15	8466	1.1812	8770	1.1403	9083	1.1009	9407	1.0630	9742	1.0265	45
16	8471	1.1806	8775	1.1396	9089	1.1003	9413	1.0624	9747	1.0259	44
17	8476	1.1799	8780	1.1389	9094	1.0996	9418	1.0618	9753	1.0253	43
18	8481	1.1792	8785	1.1383	9099	1.0990	9424	1.0612	9759	1.0247	42
19	8486	1.1785	8790	1.1376	9105	1.0983	9429	1.0606	9764	1.0241	41
20	8491	1.1778	8796	1.1369	9110	1.0977	9435	1.0599	9770	1.0235	40
21	8496	1.1771	8801	1.1363	9115	1.0971	9440	1.0593	9776	1.0230	39
22	8501	1.1764	8806	1.1356	9121	1.0964	9446	1.0587	9781	1.0224	38
23	8506	1.1757	8811	1.1349	9126	1.0958	9451	1.0581	9787	1.0218	37
24	8511	1.1750	8816	1.1343	9131	1.0951	9457	1.0575	9793	1.0212	36
25	8516	1.1743	8821	1.1336	9137	1.0945	9462	1.0569	9798	1.0206	35
26	8521	1.1736	8827	1.1329	9142	1.0939	9468	1.0562	9804	1.0200	34
27	8526	1.1729	8832	1.1323	9147	1.0932	9473	1.0556	9810	1.0194	33
28	8531	1.1722	8837	1.1316	9153	1.0926	9479	1.0550	9816	1.0188	32
29	8536	1.1715	8842	1.1310	9158	1.0919	9484	1.0544	9821	1.0182	31
30	8541	1.1708	8847	1.1303	9163	1.0913	9490	1.0538	9827	1.0176	30
31	8546	1.1702	8852	1.1296	9169	1.0907	9495	1.0532	9833	1.0170	29
32	8551	1.1695	8858	1.1290	9174	1.0900	9501	1.0526	9838	1.0164	28
33	8556	1.1688	8863	1.1283	9179	1.0894	9506	1.0519	9844	1.0158	27
34	8561	1.1681	8868	1.1276	9185	1.0888	9512	1.0513	9850	1.0152	26
35	8566	1.1674	8873	1.1270	9190	1.0881	9517	1.0507	9856	1.0147	25
36	8571	1.1667	8878	1.1263	9195	1.0875	9523	1.0501	9861	1.0141	24
37	8576	1.1660	8884	1.1257	9201	1.0869	9528	1.0495	9867	1.0135	23
38	8581	1.1653	8889	1.1250	9206	1.0862	9534	1.0489	9873	1.0129	22
39	8586	1.1647	8894	1.1243	9212	1.0856	9540	1.0483	9879	1.0123	21
40	8591	1.1640	8899	1.1237	9217	1.0850	9545	1.0477	9884	1.0117	20
41	8596	1.1633	8904	1.1230	9222	1.0843	9551	1.0470	9890	1.0111	19
42	8601	1.1626	8910	1.1224	9228	1.0837	9556	1.0464	9896	1.0105	18
43	8606	1.1619	8915	1.1217	9233	1.0831	9562	1.0458	9902	1.0099	17
44	8611	1.1612	8920	1.1211	9239	1.0824	9567	1.0452	9907	1.0094	16
45	8617	1.1606	8925	1.1204	9244	1.0818	9573	1.0446	9913	1.0088	15
46	8622	1.1599	8931	1.1197	9249	1.0812	9578	1.0440	9919	1.0082	14
47	8627	1.1592	8936	1.1191	9255	1.0805	9584	1.0434	9925	1.0076	13
48	8632	1.1585	8941	1.1184	9260	1.0799	9590	1.0428	9930	1.0070	12
49	8637	1.1578	8946	1.1178	9266	1.0793	9595	1.0422	9936	1.0064	11
50	8642	1.1571	8952	1.1171	9271	1.0786	9601	1.0416	9942	1.0058	10
51	8647	1.1565	8957	1.1165	9276	1.0780	9606	1.0410	9948	1.0052	9
52	8652	1.1558	8962	1.1158	9282	1.0774	9612	1.0404	9954	1.0047	8
53	8657	1.1551	8967	1.1152	9287	1.0768	9618	1.0398	9959	1.0041	7
54	8662	1.1544	8972	1.1145	9293	1.0761	9623	1.0392	9965	1.0035	6
55	8667	1.1538	8978	1.1139	9298	1.0755	9629	1.0385	9971	1.0029	5
56	8672	1.1531	8983	1.1132	9303	1.0749	9634	1.0379	9977	1.0023	4
57	8678	1.1524	8988	1.1126	9309	1.0742	9640	1.0373	9983	1.0017	3
58	8683	1.1517	8994	1.1119	9314	1.0736	9646	1.0367	9988	1.0012	2
59	8688	1.1510	8999	1.1113	9320	1.0730	9651	1.0361	9994	1.0006	1
60	8693	1.1504	9004	1.1106	9325	1.0724	9657	1.0355	1.000	1.0000	0
′	cot	tan	cot	tan	cot	tan	cot	tan	cot	tan	′
	49°		48°		47°		46°		45°		

	0°		1°		2°		3°		
′	Sec'nt	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	′
0	1.0000	Infinite	1.0002	57.2987	1.0006	28.6537	1.0014	19.1073	60
1	1.0000	3437.7468	1.0002	56.3595	1.0006	28.4170	1.0014	19.0019	59
2	1.0000	1718.8735	1.0002	55.4505	1.0006	28.1842	1.0014	18.8975	58
3	1.0000	1145.9157	1.0002	54.5705	1.0006	27.9551	1.0014	18.7944	57
4	1.0000	859.4369	1.0002	53.7179	1.0007	27.7298	1.0014	18.6923	56
5	1.0000	687.5496	1.0002	52.8916	1.0007	27.5080	1.0014	18.5914	55
6	1.0000	572.9581	1.0002	52.0903	1.0007	27.2898	1.0015	18.4915	54
7	1.0000	491.1070	1.0002	51.3129	1.0007	27.0750	1.0015	18.3927	53
8	1.0000	429.7187	1.0002	50.5584	1.0007	26.8636	1.0015	18.2950	52
9	1.0000	381.9723	1.0002	49.8258	1.0007	26.6555	1.0015	18.1983	51
10	1.0000	343.7752	1.0002	49.1141	1.0007	26.4505	1.0015	18.1026	50
11	1.0000	312.5230	1.0002	48.4224	1.0007	26.2487	1.0015	18.0079	49
12	1.0000	286.4795	1.0002	47.7500	1.0007	26.0499	1.0016	17.9142	48
13	1.0000	264.4427	1.0002	47.0960	1.0007	25.8542	1.0016	17.8215	47
14	1.0000	245.5540	1.0002	46.4596	1.0008	25.6613	1.0016	17.7298	46
15	1.0000	229.1838	1.0002	45.8403	1.0008	25.4713	1.0016	17.6389	45
16	1.0000	214.8600	1.0002	45.2372	1.0008	25.2841	1.0016	17.5490	44
17	1.0000	202.2212	1.0003	44.6498	1.0008	25.0997	1.0016	17.4600	43
18	1.0000	190.9868	1.0003	44.0775	1.0008	24.9179	1.0017	17.3720	42
19	1.0000	180.9350	1.0003	43.5916	1.0008	24.7387	1.0017	17.2848	41
20	1.0000	171.8883	1.0003	42.9757	1.0008	24.5621	1.0017	17.1984	40
21	1.0000	163.7032	1.0003	42.4452	1.0008	24.3880	1.0017	17.1130	39
22	1.0000	156.2623	1.0003	41.9277	1.0009	24.2164	1.0017	17.0283	38
23	1.0000	149.4684	1.0003	41.4227	1.0009	24.0471	1.0017	16.9446	37
24	1.0000	143.2406	1.0003	40.9296	1.0009	23.8802	1.0018	16.8616	36
25	1.0000	137.5111	1.0003	40.4482	1.0009	23.7156	1.0018	16.7794	35
26	1.0000	132.2223	1.0003	39.9780	1.0009	23.5533	1.0018	16.6981	34
27	1.0000	127.3253	1.0003	39.5186	1.0009	23.3932	1.0018	16.6175	33
28	1.0000	122.7780	1.0003	39.0696	1.0009	23.2352	1.0018	16.5377	32
29	1.0000	118.5444	1.0003	38.6307	1.0009	23.0794	1.0019	16.4587	31
30	1.0000	114.5930	1.0003	38.2016	1.0010	22.9256	1.0019	16.3804	30
31	1.0000	110.8966	1.0004	37.7819	1.0010	22.7739	1.0019	16.3029	29
32	1.0000	107.4311	1.0004	37.3713	1.0010	22.6241	1.0019	16.2261	28
33	1.0000	104.1757	1.0004	36.9695	1.0010	22.4764	1.0019	16.1500	27
34	1.0000	101.1118	1.0004	36.5763	1.0010	22.3305	1.0019	16.0746	26
35	1.0001	98.2230	1.0004	36.1914	1.0010	22.1865	1.0020	15.9999	25
36	1.0001	95.4947	1.0004	35.8145	1.0010	22.0444	1.0020	15.9260	24
37	1.0001	92.9139	1.0004	35.4454	1.0010	21.9041	1.0020	15.8527	23
38	1.0001	90.4689	1.0004	35.0838	1.0011	21.7656	1.0020	15.7801	22
39	1.0001	88.1492	1.0004	34.7295	1.0011	21.6288	1.0020	15.7081	21
40	1.0001	85.9456	1.0004	34.3823	1.0011	21.4937	1.0021	15.6368	20
41	1.0001	83.8495	1.0004	34.0420	1.0011	21.3603	1.0021	15.5661	19
42	1.0001	81.8532	1.0004	33.7083	1.0011	21.2285	1.0021	15.4961	18
43	1.0001	79.9497	1.0004	33.3812	1.0011	21.0984	1.0021	15.4267	17
44	1.0001	78.1327	1.0005	33.0603	1.0011	20.9698	1.0021	15.3579	16
45	1.0001	76.3966	1.0005	32.7455	1.0012	20.8428	1.0021	15.2898	15
46	1.0001	74.7359	1.0005	32.4367	1.0012	20.7174	1.0022	15.2222	14
47	1.0001	73.1458	1.0005	32.1337	1.0012	20.5934	1.0022	15.1553	13
48	1.0001	71.6221	1.0005	31.8362	1.0012	20.4709	1.0022	15.0889	12
49	1.0001	70.1605	1.0005	31.5442	1.0012	20.3499	1.0022	15.0231	11
50	1.0001	68.7574	1.0005	31.2576	1.0012	20.2303	1.0022	14.9579	10
51	1.0001	67.4093	1.0005	30.9761	1.0012	20.1121	1.0023	14.8932	9
52	1.0001	66.1130	1.0005	30.6996	1.0013	19.9952	1.0023	14.8291	8
53	1.0001	64.8657	1.0005	30.4280	1.0013	19.8798	1.0023	14.7656	7
54	1.0001	63.6646	1.0005	30.1612	1.0013	19.7656	1.0023	14.7026	6
55	1.0001	62.5071	1.0006	29.8990	1.0013	19.6528	1.0023	14.6401	5
56	1.0001	61.3911	1.0006	29.6414	1.0013	19.5412	1.0024	14.5782	4
57	1.0001	60.3141	1.0006	29.3881	1.0013	19.4309	1.0024	14.5168	3
58	1.0001	59.2743	1.0006	29.1392	1.0013	19.3218	1.0024	14.4559	2
59	1.0001	58.2698	1.0006	28.8944	1.0014	19.2140	1.0024	14.3955	1
60	1.0002	57.2987	1.0006	28.6537	1.0014	19.1073	1.0024	14.3356	0
′	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	′
	89°		88°		87°		86°		

	4°		5°		6°		7°		
′	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	′
0	**1.0024**	**14.3356**	**1.0038**	**11.4737**	**1.0055**	**9.5668**	**1.0075**	**8.2055**	**60**
1	1.0025	14.2762	1.0038	11.4357	1.0055	9.5404	1.0075	8.1861	59
2	1.0025	14.2173	1.0039	11.3979	1.0056	9.5141	1.0076	8.1668	58
3	1.0025	14.1589	1.0039	11.3604	1.0056	9.4880	1.0076	8.1476	57
4	1.0025	14.1010	1.0039	11.3231	1.0056	9.4620	1.0077	8.1285	56
5	**1.0025**	**14.0435**	**1.0039**	**11.2861**	**1.0057**	**9.4362**	**1.0077**	**8.1095**	**55**
6	1.0026	13.9865	1.0040	11.2493	1.0057	9.4105	1.0077	8.0905	54
7	1.0026	13.9300	1.0040	11.2128	1.0057	9.3850	1.0078	8.0717	53
8	1.0026	13.8739	1.0040	11.1765	1.0058	9.3596	1.0078	8.0529	52
9	1.0026	13.8183	1.0041	11.1404	1.0058	9.3343	1.0078	8.0342	51
10	**1.0026**	**13.7631**	**1.0041**	**11.1045**	**1.0058**	**9.3092**	**1.0079**	**8.0156**	**50**
11	1.0027	13.7084	1.0041	11.0689	1.0059	9.2842	1.0079	7.9971	49
12	1.0027	13.6541	1.0041	11.0336	1.0059	9.2593	1.0079	7.9787	48
13	1.0027	13.6002	1.0042	10.9984	1.0059	9.2346	1.0080	7.9604	47
14	1.0027	13.5468	1.0042	10.9635	1.0059	9.2100	1.0080	7.9422	46
15	**1.0028**	**13.4937**	**1.0042**	**10.9288**	**1.0060**	**9.1855**	**1.0081**	**7.9240**	**45**
16	1.0028	13.4411	1.0042	10.8943	1.0060	9.1612	1.0081	7.9059	44
17	1.0028	13.3889	1.0043	10.8600	1.0060	9.1370	1.0081	7.8879	43
18	1.0028	13.3371	1.0043	10.8260	1.0061	9.1129	1.0082	7.8700	42
19	1.0028	13.2857	1.0043	10.7921	1.0061	9.0890	1.0082	7.8522	41
20	**1.0029**	**13.2347**	**1.0044**	**10.7585**	**1.0061**	**9.0652**	**1.0083**	**7.8344**	**40**
21	1.0029	13.1841	1.0044	10.7251	1.0062	9.0415	1.0083	7.8168	39
22	1.0029	13.1339	1.0044	10.6919	1.0062	9.0179	1.0083	7.7992	38
23	1.0029	13.0804	1.0044	10.6589	1.0062	8.9944	1.0084	7.7817	37
24	1.0030	13.0346	1.0045	10.6261	1.0063	8.9711	1.0084	7.7642	36
25	**1.0030**	**12.9855**	**1.0045**	**10.5935**	**1.0063**	**8.9479**	**1.0084**	**7.7469**	**35**
26	1.0030	12.9368	1.0045	10.5611	1.0063	8.9248	1.0085	7.7296	34
27	1.0030	12.8884	1.0045	10.5289	1.0064	8.9019	1.0085	7.7124	33
28	1.0030	12.8404	1.0046	10.4969	1.0064	8.8790	1.0086	7.6953	32
29	1.0031	12.7928	1.0046	10.4651	1.0064	8.8563	1.0086	7.6783	31
30	**1.0031**	**12.7455**	**1.0046**	**10.4334**	**1.0065**	**8.8337**	**1.0086**	**7.6613**	**30**
31	1.0031	12.6986	1.0047	10.4020	1.0065	8.8112	1.0087	7.6444	29
32	1.0031	12.6520	1.0047	10.3708	1.0065	8.7888	1.0087	7.6276	28
33	1.0032	12.6057	1.0047	10.3397	1.0066	8.7665	1.0087	7.6109	27
34	1.0032	12.5598	1.0047	10.3089	1.0066	8.7444	1.0088	7.5942	26
35	**1.0032**	**12.5142**	**1.0048**	**10.2782**	**1.0066**	**8.7223**	**1.0088**	**7.5776**	**25**
36	1.0032	12.4690	1.0048	10.2477	1.0067	8.7004	1.0089	7.5611	24
37	1.0033	12.4241	1.0048	10.2174	1.0067	8.6786	1.0089	7.5446	23
38	1.0033	12.3795	1.0049	10.1873	1.0067	8.6569	1.0089	7.5282	22
39	1.0033	12.3352	1.0049	10.1573	1.0068	8.6353	1.0090	7.5119	21
40	**1.0033**	**12.2913**	**1.0049**	**10.1275**	**1.0068**	**8.6138**	**1.0090**	**7.4957**	**20**
41	1.0033	12.2476	1.0049	10.0979	1.0068	8.5924	1.0091	7.4795	19
42	1.0034	12.2043	1.0050	10.0685	1.0069	8.5711	1.0091	7.4635	18
43	1.0034	12.1613	1.0050	10.0392	1.0069	8.5500	1.0091	7.4474	17
44	1.0034	12.1185	1.0050	10.0101	1.0069	8.5289	1.0092	7.4315	16
45	**1.0034**	**12.0761**	**1.0051**	**9.9812**	**1.0070**	**8.5079**	**1.0092**	**7.4156**	**15**
46	1.0035	12.0340	1.0051	9.9525	1.0070	8.4871	1.0093	7.3998	14
47	1.0035	11.9921	1.0051	9.9239	1.0070	8.4663	1.0093	7.3840	13
48	1.0035	11.9506	1.0051	9.8955	1.0071	8.4457	1.0093	7.3683	12
49	1.0035	11.9093	1.0052	9.8672	1.0071	8.4251	1.0094	7.3527	11
50	**1.0036**	**11.8684**	**1.0052**	**9.8391**	**1.0072**	**8.4047**	**1.0094**	**7.3372**	**10**
51	1.0036	11.8277	1.0052	9.8112	1.0072	8.3843	1.0095	7.3217	9
52	1.0036	11.7873	1.0053	9.7834	1.0072	8.3641	1.0095	7.3063	8
53	1.0036	11.7471	1.0053	9.7558	1.0073	8.3439	1.0095	7.2909	7
54	1.0037	11.7073	1.0053	9.7283	1.0073	8.3238	1.0096	7.2757	6
55	**1.0037**	**11.6677**	**1.0054**	**9.7010**	**1.0073**	**8.3039**	**1.0096**	**7.2604**	**5**
56	1.0037	11.6284	1.0054	9.6739	1.0074	8.2840	1.0097	7.2453	4
57	1.0037	11.5893	1.0054	9.6469	1.0074	8.2642	1.0097	7.2302	3
58	1.0038	11.5505	1.0055	9.6200	1.0074	8.2446	1.0097	7.2152	2
59	1.0038	11.5120	1.0055	9.5933	1.0075	8.2250	1.0098	7.2002	1
60	**1.0038**	**11.4737**	**1.0055**	**9.5668**	**1.0075**	**8.2055**	**1.0098**	**7.1853**	**0**
′	**Co-s't**	**Secant**	**Co-'st**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	′
	85°		84°		83°		82°		

	8°		9°		10°		11°		
′	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	′
0	1.0098	7.1853	1.0125	6.3925	1.0154	5.7588	1.0187	5.2408	60
1	1.0099	7.1705	1.0125	6.3807	1.0155	5.7493	1.0188	5.2330	59
2	1.0099	7.1557	1.0126	6.3691	1.0155	5.7398	1.0188	5.2252	58
3	1.0100	7.1410	1.0126	6.3574	1.0156	5.7304	1.0189	5.2174	57
4	1.0100	7.1263	1.0127	6.3458	1.0156	5.7210	1.0189	5.2097	56
5	1.0100	7.1117	1.0127	6.3343	1.0157	5.7117	1.0190	5.2019	55
6	1.0101	7.0972	1.0127	6.3228	1.0157	5.7023	1.0191	5.1942	54
7	1.0101	7.0827	1.0128	6.3113	1.0158	5.6930	1.0191	5.1865	53
8	1.0102	7.0683	1.0128	6.2999	1.0158	5.6838	1.0192	5.1789	52
9	1.0102	7.0539	1.0129	6.2885	1.0159	5.6745	1.0192	5.1712	51
10	1.0102	7.0396	1.0129	6.2772	1.0159	5.6653	1.0193	5.1636	50
11	1.0103	7.0254	1.0130	6.2659	1.0160	5.6562	1.0194	5.1560	49
12	1.0103	7.0112	1.0130	6.2546	1.0161	5.6470	1.0194	5.1484	48
13	1.0104	6.9971	1.0131	6.2434	1.0161	5.6379	1.0195	5.1409	47
14	1.0104	6.9830	1.0131	6.2323	1.0162	5.6288	1.0195	5.1333	46
15	1.0105	6.9690	1.0132	6.2211	1.0162	5.6198	1.0196	5.1258	45
16	1.0105	6.9550	1.0132	6.2100	1.0163	5.6107	1.0197	5.1183	44
17	1.0105	6.9411	1.0133	6.1990	1.0163	5.6017	1.0197	5.1109	43
18	1.0106	6.9273	1.0133	6.1880	1.0164	5.5928	1.0198	5.1034	42
19	1.0106	6.9135	1.0134	6.1770	1.0164	5.5838	1.0198	5.0960	41
20	1.0107	6.8998	1.0134	6.1661	1.0165	5.5749	1.0199	5.0886	40
21	1.0107	6.8861	1.0135	6.1552	1.0165	5.5660	1.0199	5.0813	39
22	1.0108	6.8725	1.0135	6.1443	1.0166	5.5572	1.0200	5.0739	38
23	1.0108	6.8589	1.0136	6.1335	1.0166	5.5484	1.0201	5.0666	37
24	1.0108	6.8454	1.0136	6.1227	1.0167	5.5396	1.0201	5.0593	36
25	1.0109	6.8320	1.0137	6.1120	1.0168	5.5308	1.0202	5.0520	35
26	1.0109	6.8186	1.0137	6.1013	1.0168	5.5221	1.0202	5.0447	34
27	1.0110	6.8052	1.0138	6.0906	1.0169	5.5134	1.0203	5.0375	33
28	1.0110	6.7919	1.0138	6.0800	1.0169	5.5047	1.0204	5.0302	32
29	1.0111	6.7787	1.0139	6.0694	1.0170	5.4960	1.0204	5.0230	31
30	1.0111	6.7655	1.0139	6.0589	1.0170	5.4874	1.0205	5.0158	30
31	1.0111	6.7523	1.0139	6.0483	1.0171	5.4788	1.0205	5.0087	29
32	1.0112	6.7392	1.0140	6.0379	1.0171	5.4702	1.0206	5.0015	28
33	1.0112	6.7262	1.0141	6.0274	1.0172	5.4617	1.0207	4.9944	27
34	1.0113	6.7132	1.0141	6.0170	1.0173	5.4532	1.0207	4.9873	26
35	1.0113	6.7003	1.0141	6.0067	1.0173	5.4447	1.0208	4.9803	25
36	1.0114	6.6874	1.0142	5.9963	1.0174	5.4362	1.0209	4.9732	24
37	1.0114	6.6745	1.0142	5.9860	1.0174	5.4278	1.0209	4.9662	23
38	1.0115	6.6618	1.0143	5.9758	1.0175	5.4194	1.0210	4.9591	22
39	1.0115	6.6490	1.0143	5.9655	1.0175	5.4110	1.0210	4.9521	21
40	1.0115	6.6363	1.0144	5.9554	1.0176	5.4026	1.0211	4.9452	20
41	1.0116	6.6237	1.0145	5.9452	1.0176	5.3943	1.0212	4.9382	19
42	1.0116	6.6111	1.0145	5.9351	1.0177	5.3860	1.0212	4.9313	18
43	1.0117	6.5986	1.0145	5.9250	1.0178	5.3777	1.0213	4.9244	17
44	1.0117	6.5861	1.0146	5.9150	1.0178	5.3695	1.0213	4.9175	16
45	1.0118	6.5736	1.0147	5.9049	1.0179	5.3612	1.0214	4.9106	15
46	1.0118	6.5612	1.0147	5.8950	1.0179	5.3530	1.0215	4.9037	14
47	1.0119	6.5489	1.0148	5.8850	1.0180	5.3449	1.0215	4.8969	13
48	1.0119	6.5365	1.0148	5.8751	1.0180	5.3367	1.0216	4.8901	12
49	1.0120	6.5243	1.0149	5.8652	1.0181	5.3286	1.0217	4.8833	11
50	1.0120	6.5121	1.0149	5.8554	1.0181	5.3205	1.0217	4.8765	10
51	1.0120	6.4999	1.0150	5.8456	1.0182	5.3124	1.0218	4.8697	9
52	1.0121	6.4878	1.0150	5.8358	1.0183	5.3044	1.0218	4.8630	8
53	1.0121	6.4757	1.0151	5.8261	1.0183	5.2963	1.0219	4.8563	7
54	1.0122	6.4637	1.0151	5.8163	1.0184	5.2883	1.0220	4.8496	6
55	1.0122	6.4517	1.0152	5.8067	1.0184	5.2804	1.0220	4.8429	5
56	1.0123	6.4398	1.0152	5.7970	1.0185	5.2724	1.0221	4.8362	4
57	1.0123	6.4279	1.0153	5.7874	1.0185	5.2645	1.0222	4.8296	3
58	1.0124	6.4160	1.0153	5.7778	1.0186	5.2566	1.0222	4.8229	2
59	1.0124	6.4042	1.0154	5.7683	1.0187	5.2487	1.0223	4.8163	1
60	1.0125	6.3925	1.0154	5.7588	1.0187	5.2408	1.0223	4.8097	0
′	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	′
	81°		80°		79°		78°		

	12°		13°		14°		15°		
′	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	′
0	**1.0223**	**4.8097**	**1.0263**	**4.4454**	**1.0306**	**4.1336**	**1.0353**	**3.8637**	**60**
1	1.0224	4.8032	1.0264	4.4398	1.0307	4.1287	1.0354	3.8595	59
2	1.0225	4.7966	1.0264	4.4342	1.0308	4.1239	1.0354	3.8553	58
3	1.0225	4.7901	1.0265	4.4287	1.0308	4.1191	1.0355	3.8512	57
4	1.0226	4.7835	1.0266	4.4231	1.0309	4.1144	1.0356	3.8470	56
5	**1.0227**	**4.7771**	**1.0266**	**4.4176**	**1.0310**	**4.1096**	**1.0357**	**3.8428**	**55**
6	1.0227	4.7706	1.0267	4.4121	1.0311	4.1048	1.0358	3.8387	54
7	1.0228	4.7641	1.0268	4.4066	1.0311	4.1001	1.0358	3.8346	53
8	1.0228	4.7577	1.0269	4.4011	1.0312	4.0954	1.0359	3.8304	52
9	1.0229	4.7512	1.0269	4.3956	1.0313	4.0906	1.0360	3.8263	51
10	**1.0230**	**4.7448**	**1.0270**	**4.3901**	**1.0314**	**4.0859**	**1.0361**	**3.8222**	**50**
11	1.0230	4.7384	1.0271	4.3847	1.0314	4.0812	1.0362	3.8181	49
12	1.0231	4.7320	1.0271	4.3792	1.0315	4.0765	1.0363	3.8140	48
13	1.0232	4.7257	1.0272	4.3738	1.0316	4.0718	1.0363	3.8100	47
14	1.0232	4.7194	1.0273	4.3684	1.0317	4.0672	1.0364	3.8059	46
15	**1.0233**	**4.7130**	**1.0273**	**4.3630**	**1.0317**	**4.0625**	**1.0365**	**3.8018**	**45**
16	1.0234	4.7067	1.0274	4.3576	1.0318	4.0579	1.0366	3.7978	44
17	1.0234	4.7004	1.0275	4.3522	1.0319	4.0532	1.0367	3.7937	43
18	1.0235	4.6942	1.0276	4.3469	1.0320	4.0486	1.0367	3.7897	42
19	1.0236	4.6879	1.0276	4.3415	1.0320	4.0440	1.0368	3.7857	41
20	**1.0236**	**4.6817**	**1.0277**	**4.3362**	**1.0321**	**4.0394**	**1.0369**	**3.7817**	**40**
21	1.0237	4.6755	1.0278	4.3309	1.0322	4.0348	1.0370	3.7777	39
22	1.0238	4.6692	1.0278	4.3256	1.0323	4.0302	1.0371	3.7737	38
23	1.0238	4.6631	1.0279	4.3203	1.0324	4.0256	1.0372	3.7697	37
24	1.0239	4.6569	1.0280	4.3150	1.0324	4.0211	1.0372	3.7657	36
25	**1.0240**	**4.6507**	**1.0281**	**4.3098**	**1.0325**	**4.0165**	**1.0373**	**3.7617**	**35**
26	1.0240	4.6446	1.0281	4.3045	1.0326	4.0120	1.0374	3.7577	34
27	1.0241	4.6385	1.0282	4.2993	1.0327	4.0075	1.0375	3.7538	33
28	1.0241	4.6324	1.0283	4.2941	1.0327	4.0029	1.0376	3.7498	32
29	1.0242	4.6263	1.0283	4.2889	1.0328	3.9984	1.0377	3.7459	31
30	**1.0243**	**4.6202**	**1.0284**	**4.2837**	**1.0329**	**3.9939**	**1.0377**	**3.7420**	**30**
31	1.0243	4.6142	1.0285	4.2785	1.0330	3.9894	1.0378	3.7381	29
32	1.0244	4.6081	1.0286	4.2733	1.0331	3.9850	1.0379	3.7341	28
33	1.0245	4.6021	1.0286	4.2681	1.0331	3.9805	1.0380	3.7302	27
34	1.0245	4.5961	1.0287	4.2630	1.0332	3.9760	1.0381	3.7263	26
35	**1.0246**	**4.5901**	**1.0288**	**4.2579**	**1.0333**	**3.9716**	**1.0382**	**3.7225**	**25**
36	1.0247	4.5841	1.0288	4.2527	1.0334	3.9672	1.0383	3.7186	24
37	1.0247	4.5782	1.0289	4.2476	1.0334	3.9627	1.0383	3.7147	23
38	1.0248	4.5722	1.0290	4.2425	1.0335	3.9583	1.0384	3.7108	22
39	1.0249	4.5663	1.0291	4.2375	1.0336	3.9539	1.0385	3.7070	21
40	**1.0249**	**4.5604**	**1.0291**	**4.2324**	**1.0337**	**3.9495**	**1.0386**	**3.7031**	**20**
41	1.0250	4.5545	1.0292	4.2273	1.0338	3.9451	1.0387	3.6993	19
42	1.0251	4.5486	1.0293	4.2223	1.0338	3.9408	1.0388	3.6955	18
43	1.0251	4.5428	1.0294	4.2173	1.0339	3.9364	1.0388	3.6917	17
44	1.0252	4.5369	1.0294	4.2122	1.0340	3.9320	1.0389	3.6878	16
45	**1.0253**	**4.5311**	**1.0295**	**4.2072**	**1.0341**	**3.9277**	**1.0390**	**3.6840**	**15**
46	1.0253	4.5253	1.0296	4.2022	1.0342	3.9234	1.0391	3.6803	14
47	1.0254	4.5195	1.0297	4.1973	1.0342	3.9190	1.0392	3.6765	13
48	1.0255	4.5137	1.0297	4.1923	1.0343	3.9147	1.0393	3.6727	12
49	1.0256	4.5079	1.0298	4.1873	1.0344	3.9104	1.0394	3.6689	11
50	**1.0256**	**4.5022**	**1.0299**	**4.1824**	**1.0345**	**3.9061**	**1.0394**	**3.6652**	**10**
51	1.0257	4.4964	1.0299	4.1774	1.0346	3.9018	1.0395	3.6614	9
52	1.0258	4.4907	1.0300	4.1725	1.0346	3.8976	1.0396	3.6576	8
53	1.0258	4.4850	1.0301	4.1676	1.0347	3.8933	1.0397	3.6539	7
54	1.0259	4.4793	1.0302	4.1627	1.0348	3.8890	1.0398	3.6502	6
55	**1.0260**	**4.4736**	**1.0302**	**4.1578**	**1.0350**	**3.8848**	**1.0399**	**3.6465**	**5**
56	1.0260	4.4679	1.0303	4.1529	1.0349	3.8806	1.0400	3.6427	4
57	1.0261	4.4623	1.0304	4.1481	1.0350	3.8763	1.0400	3.6390	3
58	1.0262	4.4566	1.0305	4.1432	1.0351	3.8721	1.0401	3.6353	2
59	1.0262	4.4510	1.0305	4.1384	1.0352	3.8679	1.0402	3.6316	1
60	**1.0263**	**4.4454**	**1.0306**	**4.1336**	**1.0353**	**3.8637**	**1.0403**	**3.6280**	**0**
′	**Co-s't**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	′
	77°		76°		75°		74°		

′	16°		17°		18°		19°		′
	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	
0	**1.0403**	**3.6280**	**1.0457**	**3.4203**	**1.0515**	**3.2361**	**1.0576**	**3.0716**	**60**
1	1.0404	3.6243	1.0458	3.4171	1.0516	3.2332	1.0577	3.0690	59
2	1.0405	3.6206	1.0459	3.4138	1.0517	3.2303	1.0578	3.0664	58
3	1.0406	3.6169	1.0460	3.4106	1.0518	3.2274	1.0579	3.0638	57
4	1.0406	3.6133	1.0461	3.4073	1.0519	3.2245	1.0580	3.0612	56
5	**1.0407**	**3.6096**	**1.0462**	**3.4041**	**1.0520**	**3.2216**	**1.0582**	**3.0586**	**55**
6	1.0408	3.6060	1.0463	3.4009	1.0521	3.2188	1.0583	3.0561	54
7	1.0409	3.6024	1.0463	3.3977	1.0522	3.2159	1.0584	3.0535	53
8	1.0410	3.5988	1.0464	3.3945	1.0523	3.2131	1.0585	3.0509	52
9	1.0411	3.5951	1.0465	3.3913	1.0524	3.2102	1.0586	3.0484	51
10	**1.0412**	**3.5915**	**1.0466**	**3.3881**	**1.0525**	**3.2074**	**1.0587**	**3.0458**	**50**
11	1.0413	3.5879	1.0467	3.3849	1.0526	3.2045	1.0588	3.0433	49
12	1.0413	3.5843	1.0468	3.3817	1.0527	3.2017	1.0589	3.0407	48
13	1.0414	3.5808	1.0469	3.3785	1.0528	3.1989	1.0590	3.0382	47
14	1.0415	3.5772	1.0470	3.3754	1.0529	3.1960	1.0591	3.0357	46
15	**1.0416**	**3.5736**	**1.0471**	**3.3722**	**1.0530**	**3.1932**	**1.0592**	**3.0331**	**45**
16	1.0417	3.5700	1.0472	3.3691	1.0531	3.1904	1.0593	3.0306	44
17	1.0418	3.5665	1.0473	3.3659	1.0532	3.1876	1.0594	3.0281	43
18	1.0419	3.5629	1.0474	3.3628	1.0533	3.1848	1.0595	3.0256	42
19	1.0420	3.5594	1.0475	3.3596	1.0534	3.1820	1.0597	3 0231	41
20	**1.0421**	**3.5559**	**1.0476**	**3.3565**	**1.0535**	**3.1792**	**1.0598**	**3.0206**	**40**
21	1.0421	3.5523	1.0477	3.3534	1.0536	3.1764	1.0599	3.0181	39
22	1.0422	3.5488	1.0478	3.3502	1.0537	3.1736	1.0600	3.0156	38
23	1.0423	3.5453	1.0479	3.3471	1.0538	3.1708	1.0601	3.0131	37
24	1.0424	3.5418	1.0480	3.3440	1.0539	3.1681	1.0602	3.0106	36
25	**1.0425**	**3.5383**	**1.0481**	**3.3409**	**1.0540**	**3.1653**	**1.0603**	**3.0081**	**35**
26	1.0426	3.5348	1.0481	3.3378	1.0541	3.1625	1.0604	3.0056	34
27	1.0427	3.5313	1.0482	3.3347	1.0542	3.1598	1.0605	3.0031	33
28	1.0428	3.5279	1.0483	3.3317	1.0543	3.1570	1.0606	3.0007	32
29	1.0429	3.5244	1.0484	3.3286	1.0544	3.1543	1.0607	2.9982	31
30	**1.0429**	**3.5209**	**1.0485**	**3.3255**	**1.0545**	**3.1515**	**1.0608**	**2.9957**	**30**
31	1.0430	3.5175	1.0486	3.3224	1.0546	3.1488	1.0610	2.9933	29
32	1.0431	3.5140	1.0487	3.3194	1.0547	3.1461	1.0611	2.9908	28
33	1.0432	3.5106	1.0488	3.3163	1.0548	3.1433	1.0612	2.9884	27
34	1.0433	3.5072	1.0489	3.3133	1.0549	3.1406	1 0613	2.9859	26
35	**1.0434**	**3.5037**	**1.0490**	**3.3102**	**1.0550**	**3.1379**	**1.0614**	**2.9835**	**25**
36	1.0435	3.5003	1.0491	3.3072	1.0551	3.1352	1.0615	2.9811	24
37	1.0436	3.4969	1.0492	3.3042	1.0552	3.1325	1.0616	2.9786	23
38	1.0437	3.4935	1.0493	3.3012	1.0553	3.1298	1.0617	2.9762	22
39	1.0438	3.4901	1.0494	3.2981	1.0554	3.1271	1.0618	2.9738	21
40	**1.0439**	**3.4867**	**1.0495**	**3.2951**	**1.0555**	**3.1244**	**1.0619**	**2.9713**	**20**
41	1.0439	3.4833	1.0496	3.2921	1.0556	3.1217	1.0621	2.9689	19
42	1.0440	3.4799	1.0497	3.2891	1.0557	3.1190	1.0622	2.9665	18
43	1.0441	3.4766	1.0498	3.2861	1.0558	3.1163	1.0623	2.9641	17
44	1.0442	3.4732	1.0499	3.2831	1.0559	3.1137	1.0624	2.9617	16
45	**1.0443**	**3.4699**	**1.0500**	**3.2801**	**1.0560**	**3.1110**	**1.0625**	**2.9593**	**15**
46	1.0444	3.4665	1.0501	3.2772	1.0561	3.1083	1.0626	2.9569	14
47	1.0445	3.4632	1.0502	3.2742	1.0563	3.1057	1.0627	2.9545	13
48	1.0446	3.4598	1.0503	3.2712	1.0564	3.1030	1.0628	2.9521	12
49	1.0447	3.4565	1.0504	3.2683	1.0565	3.1004	1.0629	2.9497	11
50	**1.0448**	**3.4532**	**1.0505**	**3.2653**	**1.0566**	**3.0977**	**1.0631**	**2.9474**	**10**
51	1.0449	3.4499	1.0506	3.2624	1.0567	3.0951	1.0632	2.9450	9
52	1.0450	3.4465	1.0507	3.2594	1.0568	3.0925	1.0633	2.9426	8
53	1.0450	3.4432	1.0508	3.2565	1.0569	3.0898	1.0634	2.9403	7
54	1.0451	3.4399	1.0509	3.2535	1.0570	3.0872	1.0635	2.9379	6
55	**1.0452**	**3.4367**	**1.0510**	**3.2506**	**1.0571**	**3.0846**	**1.0636**	**2.9355**	**5**
56	1.0453	3.4334	1.0511	3.2477	1.0572	3.0820	1.0637	2.9332	4
57	1.0454	3.4301	1.0512	3.2448	1.0573	3.0794	1.0638	2.9308	3
58	1.0455	3.4268	1.0513	3.2419	1.0574	3.0768	1.0640	2.9285	2
59	1.0456	3.4236	1.0514	3.2390	1.0575	3.0741	1.0641	2.9261	1
60	**1.0457**	**3.4203**	**1.0515**	**3.2361**	**1.0576**	**3.0716**	**1.0642**	**2.9238**	**0**
′	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	′
	73°		72°		71°		70°		

	20°		21°		22°		23°		
′	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	′
0	**1.0642**	**2.9238**	**1.0711**	**2.7904**	**1.0785**	**2.6695**	**1.0864**	**2.5593**	**60**
1	1.0643	2.9215	1.0713	2.7883	1.0787	2.6675	1.0865	2.5576	59
2	1.0644	2.9191	1.0714	2.7862	1.0788	2.6656	1.0866	2.5558	58
3	1.0645	2.9168	1.0715	2.7841	1.0789	2.6637	1.0868	2.5541	57
4	1.0646	2.9145	1.0716	2.7820	1.0790	2.6618	1.0869	2.5523	56
5	**1.0647**	**2.9122**	**1.0717**	**2.7799**	**1.0792**	**2.6599**	**1.0870**	**2.5506**	**55**
6	1.0649	2.9099	1.0719	2.7778	1.0793	2.6580	1.0872	2.5488	54
7	1.0650	2.9075	1.0720	2.7757	1.0794	2.6561	1.0873	2.5471	53
8	1.0651	2.9052	1.0721	2.7736	1.0796	2.6542	1.0874	2.5454	52
9	1.0652	2.9029	1.0722	2.7715	1.0797	2.6523	1.0876	2.5436	51
10	**1.0653**	**2.9006**	**1.0723**	**2.7695**	**1.0798**	**2.6504**	**1.0877**	**2.5419**	**50**
11	1.0654	2.8983	1.0725	2.7674	1.0799	2.6485	1.0878	2.5402	49
12	1.0655	2.8960	1.0726	2.7653	1.0801	2.6466	1.0880	2.5384	48
13	1.0656	2.8938	1.0727	2.7632	1.0802	2.6447	1.0881	2.5367	47
14	1.0658	2.8915	1.0728	2.7612	1.0803	2.6428	1.0882	2.5350	46
15	**1.0659**	**2.8892**	**1.0730**	**2.7591**	**1.0804**	**2.6410**	**1.0884**	**2.5333**	**45**
16	1.0660	2.8869	1.0731	2.7570	1.0806	2.6391	1.0885	2.5316	44
17	1.0661	2.8846	1.0732	2.7550	1.0807	2.6372	1.0887	2.5299	43
18	1.0662	2.8824	1.0733	2.7529	1.0808	2.6353	1.0888	2.5282	42
19	1.0663	2.8801	1.0734	2.7509	1.0810	2.6335	1.0889	2.5264	41
20	**1.0665**	**2.8779**	**1.0736**	**2.7488**	**1.0811**	**2.6316**	**1.0891**	**2.5247**	**40**
21	1.0666	2.8756	1.0737	2.7468	1.0812	2.6298	1.0892	2.5230	39
22	1.0667	2.8733	1.0738	2.7447	1.0814	2.6279	1.0893	2.5213	38
23	1.0668	2.8711	1.0739	2.7427	1.0815	2.6260	1.0895	2.5196	37
24	1.0669	2.8688	1.0740	2.7406	1.0816	2.6242	1.0896	2.5179	36
25	**1.0670**	**2.8666**	**1.0742**	**2.7386**	**1.0817**	**2.6223**	**1.0898**	**2.5163**	**35**
26	1.0671	2.8644	1.0743	2.7366	1.0819	2.6205	1.0899	2.5146	34
27	1.0673	2.8621	1.0744	2.7346	1.0820	2.6186	1.0900	2.5129	33
28	1.0674	2.8599	1.0745	2.7325	1.0821	2.6168	1.0902	2.5112	32
29	1.0675	2.8577	1.0747	2.7305	1.0823	2.6150	1.0903	2.5095	31
30	**1.0676**	**2.8554**	**1.0748**	**2.7285**	**1.0824**	**2.6131**	**1.0904**	**2.5078**	**30**
31	1.0677	2.8532	1.0749	2.7265	1.0825	2.6113	1.0906	2.5062	29
32	1.0678	2.8510	1.0750	2.7245	1.0827	2.6095	1.0907	2.5045	28
33	1.0680	2.8488	1.0752	2.7225	1.0828	2.6076	1.0909	2.5028	27
34	1.0681	2.8466	1.0753	2.7205	1.0829	2.6058	1.0910	2.5012	26
35	**1.0682**	**2.8444**	**1.0754**	**2.7185**	**1.0830**	**2.6040**	**1.0911**	**2.4995**	**25**
36	1.0683	2.8422	1.0755	2.7165	1.0832	2.6022	1.0913	2.4978	24
37	1.0684	2.8400	1.0757	2.7145	1.0833	2.6003	1.0914	2.4962	23
38	1.0685	2.8378	1.0758	2.7125	1.0834	2.5985	1.0915	2.4945	22
39	1.0687	2.8356	1.0759	2.7105	1.0836	2.5967	1.0917	2.4928	21
40	**1.0688**	**2.8334**	**1.0760**	**2.7085**	**1.0837**	**2.5949**	**1.0918**	**2.4912**	**20**
41	1.0689	2.8312	1.0761	2.7065	1.0838	2.5931	1.0920	2.4895	19
42	1.0690	2.8291	1.0763	2.7045	1.0840	2.5913	1.0921	2.4879	18
43	1.0691	2.8269	1.0764	2.7026	1.0841	2.5895	1.0922	2.4862	17
44	1.0692	2.8247	1.0765	2.7006	1.0842	2.5877	1.0924	2.4846	16
45	**1.0694**	**2.8225**	**1.0766**	**2.6986**	**1.0844**	**2.5859**	**1.0925**	**2.4829**	**15**
46	1.0695	2.8204	1.0768	2.6967	1.0845	2.5841	1.0927	2.4813	14
47	1.0696	2.8182	1.0769	2.6947	1.0846	2.5823	1.0928	2.4797	13
48	1.0697	2.8161	1.0770	2.6927	1.0848	2.5805	1.0929	2.4780	12
49	1.0698	2.8139	1.0771	2.6908	1.0849	2.5788	1.0931	2.4764	11
50	**1.0700**	**2.8117**	**1.0773**	**2.6888**	**1.0850**	**2.5770**	**1.0932**	**2.4748**	**10**
51	1.0701	2.8096	1.0774	2.6869	1.0852	2.5752	1.0934	2.4731	9
52	1.0702	2.8075	1.0775	2.6849	1.0853	2.5734	1.0935	2.4715	8
53	1.0703	2.8053	1.0777	2.6830	1.0854	2.5716	1.0936	2.4699	7
54	1.0704	2.8032	1.0778	2.6811	1.0856	2.5699	1.0938	2.4683	6
55	**1.0705**	**2.8010**	**1.0779**	**2.6791**	**1.0857**	**2.5681**	**1.0939**	**2.4667**	**5**
56	1.0707	2.7989	1.0780	2.6772	1.0858	2.5663	1.0941	2.4650	4
57	1.0708	2.7968	1.0782	2.6752	1.0860	2.5646	1.0942	2.4634	3
58	1.0709	2.7947	1.0783	2.6733	1.0861	2.5628	1.0944	2.4618	2
59	1.0710	2.7925	1.0784	2.6714	1.0862	2.5611	1.0945	2.4602	1
60	**1.0711**	**2.7904**	**1.0785**	**2.6695**	**1.0864**	**2.5593**	**1.0946**	**2.4586**	**0**
′	**Co-s't**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	**Co-s't**	**Secant**	′
	69°		68°		67°		66°		

	24°		25°		26°		27°		
′	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	′
0	1.0946	2.4586	1.1034	2.3662	1.1126	2.2812	1.1223	2.2028	60
1	1.0948	2.4570	1.1035	2.3647	1.1128	2.2798	1.1225	2.2014	59
2	1.0949	2.4554	1.1037	2.3633	1.1129	2.2785	1.1227	2.2002	58
3	1.0951	2.4538	1.1038	2.3618	1.1131	2.2771	1.1228	2.1989	57
4	1.0952	2.4522	1.1040	2.3603	1.1132	2.2757	1.1230	2.1977	56
5	1.0953	2.4506	1.1041	2.3588	1.1134	2.2744	1.1232	2.1964	55
6	1.0955	2.4490	1.1043	2.3574	1.1136	2.2730	1.1233	2.1952	54
7	1.0956	2.4474	1.1044	2.3559	1.1137	2.2717	1.1235	2.1939	53
8	1.0958	2.4458	1.1046	2.3545	1.1139	2.2703	1.1237	2.1927	52
9	1.0959	2.4442	1.1047	2.3530	1.1140	2.2690	1.1238	2.1914	51
10	1.0961	2.4426	1.1049	2.3515	1.1142	2.2677	1.1240	2.1902	50
11	1.0962	2.4411	1.1050	2.3501	1.1143	2.2663	1.1242	2.1890	49
12	1.0963	2.4395	1.1052	2.3486	1.1145	2.2650	1.1243	2.1877	48
13	1.0965	2.4379	1.1053	2.3472	1.1147	2.2636	1.1245	2.1865	47
14	1.0966	2.4363	1.1055	2.3457	1.1148	2.2623	1.1247	2.1852	46
15	1.0968	2.4348	1.1056	2.3443	1.1150	2.2610	1.1248	2.1840	45
16	1.0969	2.4332	1.1058	2.3428	1.1151	2.2596	1.1250	2.1828	44
17	1.0971	2.4316	1.1059	2.3414	1.1153	2.2583	1.1252	2.1815	43
18	1.0972	2.4300	1.1061	2.3400	1.1155	2.2570	1.1253	2.1803	42
19	1.0974	2.4285	1.1062	2.3385	1.1156	2.2556	1.1255	2.1791	41
20	1.0975	2.4269	1.1064	2.3371	1.1158	2.2543	1.1257	2.1779	40
21	1.0976	2.4254	1.1066	2.3356	1.1159	2.2530	1.1259	2.1766	39
22	1.0978	2.4238	1.1067	2.3342	1.1161	2.2517	1.1260	2.1754	38
23	1.0979	2.4222	1.1069	2.3328	1.1163	2.2504	1.1262	2.1742	37
24	1.0981	2.4207	1.1070	2.3314	1.1164	2.2490	1.1264	2.1730	36
25	1.0982	2.4191	1.1072	2.3299	1.1166	2.2477	1.1265	2.1717	35
26	1.0984	2.4176	1.1073	2.3285	1.1167	2.2464	1.1267	2.1705	34
27	1.0985	2.4160	1.1075	2.3271	1.1169	2.2451	1.1269	2.1693	33
28	1.0987	2.4145	1.1076	2.3257	1.1171	2.2438	1.1270	2.1681	32
29	1.0988	2.4130	1.1078	2.3242	1.1172	2.2425	1.1272	2.1669	31
30	1.0989	2.4114	1.1079	2.3228	1.1174	2.2412	1.1274	2.1657	30
31	1.0991	2.4099	1.1081	2.3214	1.1176	2.2399	1.1276	2.1645	29
32	1.0992	2.4083	1.1082	2.3200	1.1177	2.2385	1.1277	2.1633	28
33	1.0994	2.4068	1.1084	2.3186	1.1179	2.2372	1.1279	2.1621	27
34	1.0995	2.4053	1.1085	2.3172	1.1181	2.2359	1.1281	2.1609	26
35	1.0997	2.4038	1.1087	2.3158	1.1182	2.2346	1.1282	2.1596	25
36	1.0998	2.4022	1.1089	2.3144	1.1184	2.2333	1.1284	2.1584	24
37	1.1000	2.4007	1.1090	2.3130	1.1185	2.2320	1.1286	2.1572	23
38	1.1001	2.3992	1.1092	2.3115	1.1187	2.2308	1.1288	2.1560	22
39	1.1003	2.3977	1.1093	2.3101	1.1189	2.2295	1.1289	2.1548	21
40	1.1004	2.3961	1.1095	2.3087	1.1190	2.2282	1.1291	2.1537	20
41	1.1005	2.3946	1.1096	2.3074	1.1192	2.2269	1.1293	2.1525	19
42	1.1007	2.3931	1.1098	2.3060	1.1194	2.2256	1.1294	2.1513	18
43	1.1009	2.3916	1.1099	2.3046	1.1195	2.2243	1.1296	2.1501	17
44	1.1010	2.3901	1.1101	2.3032	1.1197	2.2230	1.1298	2.1489	16
45	1.1011	2.3886	1.1102	2.3018	1.1198	2.2217	1.1300	2.1477	15
46	1.1013	2.3871	1.1104	2.3004	1.1200	2.2205	1.1301	2.1465	14
47	1.1014	2.3856	1.1106	2.2990	1.1202	2.2192	1.1303	2.1453	13
48	1.1016	2.3841	1.1107	2.2976	1.1203	2.2179	1.1305	2.1441	12
49	1.1017	2.3826	1.1109	2.2962	1.1205	2.2166	1.1306	2.1430	11
50	1.1019	2.3811	1.1110	2.2949	1.1207	2.2153	1.1308	2.1418	10
51	1.1020	2.3796	1.1112	2.2935	1.1208	2.2141	1.1310	2.1406	9
52	1.1022	2.3781	1.1113	2.2921	1.1210	2.2128	1.1312	2.1394	8
53	1.1023	2.3766	1.1115	2.2907	1.1212	2.2115	1.1313	2.1382	7
54	1.1025	2.3751	1.1117	2.2894	1.1213	2.2103	1.1315	2.1371	6
55	1.1026	2.3736	1.1118	2.2880	1.1215	2.2090	1.1317	2.1359	5
56	1.1028	2.3721	1.1120	2.2866	1.1217	2.2077	1.1319	2.1347	4
57	1.1029	2.3706	1.1121	2.2853	1.1218	2.2065	1.1320	2.1336	3
58	1.1031	2.3692	1.1123	2.2839	1.1220	2.2052	1.1322	2.1324	2
59	1.1032	2.3677	1.1124	2.2825	1.1222	2.2039	1.1324	2.1312	1
60	1.1034	2.3662	1.1126	2.2812	1.1223	2.2028	1.1326	2.1301	0
′	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	′
	65°		64°		63°		62°		

	28°		29°		30°		31°		
′	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	′
0	1.1326	2.1301	1.1433	2.0627	1.1547	2.0000	1.1666	1.9416	60
1	1.1327	2.1289	1.1435	2.0616	1.1549	1.9990	1.1668	1.9408	59
2	1.1329	2.1277	1.1437	2.0605	1.1551	1.9980	1.1670	1.9397	58
3	1.1331	2.1266	1.1439	2.0594	1.1553	1.9970	1.1672	1.9388	57
4	1.1333	2.1254	1.1442	2.0583	1.1555	1.9960	1.1675	1.9379	56
5	1.1334	2.1242	1.1443	2.0573	1.1557	1.9950	1.1677	1.9369	55
6	1.1336	2.1231	1.1445	2.0562	1.1559	1.9940	1.1679	1.9360	54
7	1.1338	2.1219	1.1446	2.0551	1.1561	1.9930	1.1681	1.9350	53
8	1.1340	2.1208	1.1448	2.0540	1.1563	1.9920	1.1683	1.9341	52
9	1.1342	2.1196	1.1450	2.0530	1.1565	1.9910	1.1685	1.9332	51
10	1.1343	2.1185	1.1452	2.0519	1.1566	1.9900	1.1687	1.9323	50
11	1.1345	2.1173	1.1454	2.0508	1.1568	1.9890	1.1689	1.9313	49
12	1.1347	2.1162	1.1456	2.0498	1.1570	1.9880	1.1691	1.9304	48
13	1.1349	2.1150	1.1458	2.0487	1.1572	1.9870	1.1693	1.9295	47
14	1.1350	2.1139	1.1459	2.0476	1.1574	1.9860	1.1695	1.9285	46
15	1.1352	2.1127	1.1461	2.0466	1.1576	1.9850	1.1697	1.9276	45
16	1.1354	2.1116	1.1463	2.0455	1.1578	1.9840	1.1699	1.9267	44
17	1.1356	2.1105	1.1465	2.0445	1.1580	1.9830	1.1701	1.9258	43
18	1.1357	2.1093	1.1467	2.0434	1.1582	1.9821	1.1703	1.9249	42
19	1.1359	2.1082	1.1469	2.0423	1.1584	1.9811	1.1705	1.9239	41
20	1.1361	2.1070	1.1471	2.0413	1.1586	1.9801	1.1707	1.9230	40
21	1.1363	2.1059	1.1473	2.0402	1.1588	1.9791	1.1710	1.9221	39
22	1.1365	2.1048	1.1474	2.0392	1.1590	1.9781	1.1712	1.9212	38
23	1.1366	2.1036	1.1476	2.0381	1.1592	1.9771	1.1714	1.9203	37
24	1.1368	2.1025	1.1478	2.0371	1.1594	1.9762	1.1716	1.9193	36
25	1.1370	2.1014	1.1480	2.0360	1.1596	1.9752	1.1718	1.9184	35
26	1.1372	2.1002	1.1482	2.0350	1.1598	1.9742	1.1720	1.9175	34
27	1.1374	2.0991	1.1484	2.0339	1.1600	1.9732	1.1722	1.9166	33
28	1.1375	2.0980	1.1486	2.0329	1.1602	1.9722	1.1724	1.9157	32
29	1.1377	2.0969	1.1488	2.0318	1.1604	1.9713	1.1726	1.9148	31
30	1.1379	2.0957	1.1490	2.0308	1.1606	1.9703	1.1728	1.9139	30
31	1.1381	2.0946	1.1491	2.0297	1.1608	1.9693	1.1730	1.9130	29
32	1.1383	2.0935	1.1493	2.0287	1.1610	1.9683	1.1732	1.9121	28
33	1.1384	2.0924	1.1495	2.0276	1.1612	1.9674	1.1735	1.9112	27
34	1.1386	2.0913	1.1497	2.0266	1.1614	1.9664	1.1737	1.9103	26
35	1.1388	2.0901	1.1499	2.0256	1.1616	1.9654	1.1739	1.9094	25
36	1.1390	2.0890	1.1501	2.0245	1.1618	1.9645	1.1741	1.9084	24
37	1.1392	2.0879	1.1503	2.0235	1.1620	1.9635	1.1743	1.9075	23
38	1.1393	2.0868	1.1505	2.0225	1.1622	1.9625	1.1745	1.9066	22
39	1.1395	2.0857	1.1507	2.0214	1.1624	1.9616	1.1747	1.9057	21
40	1.1397	2.0846	1.1509	2.0204	1.1626	1.9606	1.1749	1.9049	20
41	1.1399	2.0835	1.1510	2.0194	1.1628	1.9597	1.1751	1.9039	19
42	1.1401	2.0824	1.1512	2.0183	1.1630	1.9587	1.1753	1.9031	18
43	1.1402	2.0813	1.1514	2.0173	1.1632	1.9577	1.1756	1.9022	17
44	1.1404	2.0802	1.1516	2.0163	1.1634	1.9568	1.1758	1.9013	16
45	1.1406	2.0790	1.1518	2.0152	1.1636	1.9558	1.1760	1.9004	15
46	1.1408	2.0779	1.1520	2.0142	1.1638	1.9549	1.1762	1.8995	14
47	1.1410	2.0768	1.1522	2.0132	1.1640	1.9539	1.1764	1.8986	13
48	1.1412	2.0757	1.1524	2.0122	1.1642	1.9530	1.1766	1.8977	12
49	1.1413	2.0747	1.1526	2.0112	1.1644	1.9520	1.1768	1.8968	11
50	1.1415	2.0736	1.1528	2.0101	1.1646	1.9511	1.1770	1.8959	10
51	1.1417	2.0725	1.1530	2.0091	1.1648	1.9501	1.1773	1.8950	9
52	1.1419	2.0714	1.1532	2.0081	1.1650	1.9492	1.1775	1.8941	8
53	1.1421	2.0703	1.1533	2.0071	1.1652	1.9482	1.1777	1.8933	7
54	1.1423	2.0692	1.1535	2.0061	1.1654	1.9473	1.1779	1.8924	6
55	1.1424	2.0681	1.1537	2.0051	1.1656	1.9463	1.1781	1.8915	5
56	1.1426	2.0670	1.1539	2.0040	1.1658	1.9454	1.1783	1.8906	4
57	1.1428	2.0659	1.1541	2.0030	1.1660	1.9444	1.1785	1.8897	3
58	1.1430	2.0648	1.1543	2.0020	1.1662	1.9435	1.1787	1.8888	2
59	1.1432	2.0637	1.1545	2.0010	1.1664	1.9425	1.1790	1.8880	1
60	1.1434	2.0627	1.1547	2.0000	1.1666	1.9416	1.1792	1.8871	0
′	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	′
	61°		60°		59°		58°		

	32°		33°		34°		35°		
′	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	′
0	**1.1792**	**1.8871**	**1.1924**	**1.8361**	**1.2062**	**1.7883**	**1.2208**	**1.7434**	**60**
1	1.1794	1.8862	1.1926	1.8353	1.2064	1.7875	1.2210	1.7427	59
2	1.1796	1.8853	1.1928	1.8344	1.2067	1.7868	1.2213	1.7420	58
3	1.1798	1.8844	1.1930	1.8336	1.2069	1.7860	1.2215	1.7413	57
4	1.1800	1.8836	1.1933	1.8328	1.2072	1.7852	1.2218	1.7406	56
5	**1.1803**	**1.8827**	**1.1935**	**1.8320**	**1.2074**	**1.7844**	**1.2220**	**1.7398**	**55**
6	1.1805	1.8818	1.1937	1.8312	1.2076	1.7837	1.2223	1.7391	54
7	1.1807	1.8809	1.1939	1.8303	1.2079	1.7829	1.2225	1.7384	53
8	1.1809	1.8801	1.1942	1.8295	1.2081	1.7821	1.2228	1.7377	52
9	1.1811	1.8792	1.1944	1.8287	1.2084	1.7814	1.2230	1.7370	51
10	**1.1813**	**1.8783**	**1.1946**	**1.8279**	**1.2086**	**1.7806**	**1.2233**	**1.7362**	**50**
11	1.1815	1.8775	1.1948	1.8271	1.2088	1.7799	1.2235	1.7355	49
12	1.1818	1.8766	1.1951	1.8263	1.2091	1.7791	1.2238	1.7348	48
13	1.1820	1.8757	1.1953	1.8255	1.2093	1.7783	1.2240	1.7341	47
14	1.1822	1.8749	1.1955	1.8246	1.2096	1.7776	1.2243	1.7334	46
15	**1.1824**	**1.8740**	**1.1958**	**1.8238**	**1.2098**	**1.7768**	**1.2245**	**1.7327**	**45**
16	1.1826	1.8731	1.1960	1.8230	1.2100	1.7761	1.2248	1.7320	44
17	1.1828	1.8723	1.1962	1.8222	1.2103	1.7753	1.2250	1.7312	43
18	1.1831	1.8714	1.1964	1.8214	1.2105	1.7745	1.2253	1.7305	42
19	1.1833	1.8706	1.1967	1.8206	1.2107	1.7738	1.2255	1.7298	41
20	**1.1835**	**1.8697**	**1.1969**	**1.8198**	**1.2110**	**1.7730**	**1.2258**	**1.7291**	**40**
21	1.1837	1.8688	1.1971	1.8190	1.2112	1.7723	1.2260	1.7284	39
22	1.1839	1.8680	1.1974	1.8182	1.2115	1.7715	1.2263	1.7277	38
23	1.1842	1.8671	1.1976	1.8174	1.2117	1.7708	1.2265	1.7270	37
24	1.1844	1.8663	1.1978	1.8166	1.2120	1.7700	1.2268	1.7263	36
25	**1.1846**	**1.8654**	**1.1981**	**1.8158**	**1.2122**	**1.7693**	**1.2271**	**1.7256**	**35**
26	1.1848	1.8646	1.1983	1.8150	1.2124	1.7685	1.2273	1.7249	34
27	1.1850	1.8637	1.1985	1.8142	1.2127	1.7678	1.2276	1.7242	33
28	1.1852	1.8629	1.1987	1.8134	1.2129	1.7670	1.2278	1.7235	32
29	1.1855	1.8620	1.1990	1.8126	1.2132	1.7663	1.2281	1.7228	31
30	**1.1857**	**1.8612**	**1.1992**	**1.8118**	**1.2134**	**1.7655**	**1.2283**	**1.7221**	**30**
31	1.1859	1.8603	1.1994	1.8110	1.2136	1.7648	1.2286	1.7213	29
32	1.1861	1.8595	1.1997	1.8102	1.2139	1.7640	1.2288	1.7206	28
33	1.1863	1.8586	1.1999	1.8094	1.2141	1.7633	1.2291	1.7199	27
34	1.1866	1.8578	1.2001	1.8086	1.2144	1.7625	1.2293	1.7192	26
35	**1.1868**	**1.8569**	**1.2004**	**1.8078**	**1.2146**	**1.7618**	**1.2296**	**1.7185**	**25**
36	1.1870	1.8561	1.2006	1.8070	1.2149	1.7610	1.2299	1.7178	24
37	1.1872	1.8552	1.2008	1.8062	1.2151	1.7603	1.2301	1.7172	23
38	1.1875	1.8544	1.2011	1.8055	1.2154	1.7596	1.2304	1.7165	22
39	1.1877	1.8535	1.2013	1.8047	1.2156	1.7588	1.2306	1.7158	21
40	**1.1879**	**1.8527**	**1.2015**	**1.8039**	**1.2158**	**1.7581**	**1.2309**	**1.7151**	**20**
41	1.1881	1.8519	1.2018	1.8031	1.2161	1.7573	1.2311	1.7144	19
42	1.1883	1.8510	1.2020	1.8023	1.2163	1.7566	1.2314	1.7137	18
43	1.1886	1.8502	1.2022	1.8015	1.2166	1.7559	1.2317	1.7130	17
44	1.1888	1.8493	1.2025	1.8007	1.2168	1.7551	1.2319	1.7123	16
45	**1.1890**	**1.8485**	**1.2027**	**1.8000**	**1.2171**	**1.7544**	**1.2322**	**1.7116**	**15**
46	1.1892	1.8477	1.2029	1.7992	1.2173	1.7537	1.2324	1.7109	14
47	1.1894	1.8468	1.2032	1.7984	1.2176	1.7529	1.2327	1.7102	13
48	1.1897	1.8460	1.2034	1.7976	1.2178	1.7522	1.2329	1.7095	12
49	1.1899	1.8452	1.2036	1.7968	1.2181	1.7515	1.2332	1.7088	11
50	**1.1901**	**1.8443**	**1.2039**	**1.7960**	**1.2183**	**1.7507**	**1.2335**	**1.7081**	**10**
51	1.1903	1.8435	1.2041	1.7953	1.2185	1.7500	1.2337	1.7075	9
52	1.1906	1.8427	1.2043	1.7945	1.2188	1.7493	1.2340	1.7068	8
53	1.1908	1.8419	1.2046	1.7937	1.2190	1.7485	1.2342	1.7061	7
54	1.1910	1.8410	1.2048	1.7929	1.2193	1.7478	1.2345	1.7054	6
55	**1.1912**	**1.8402**	**1.2050**	**1.7922**	**1.2195**	**1.7471**	**1.2348**	**1.7047**	**5**
56	1.1915	1.8394	1.2053	1.7914	1.2198	1.7463	1.2350	1.7040	4
57	1.1917	1.8385	1.2055	1.7906	1.2200	1.7456	1.2353	1.7033	3
58	1.1919	1.8377	1.2057	1.7898	1.2203	1.7449	1.2355	1.7027	2
59	1.1921	1.8369	1.2060	1.7891	1.2205	1.7442	1.2358	1.7020	1
60	**1.1924**	**1.8361**	**1.2062**	**1.7883**	**1.2208**	**1.7434**	**1.2361**	**1.7013**	**0**
′	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	′
	57°		56°		55°		54°		

	36°		37°		38°		39°		
′	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	′
0	1.2361	1.7013	1.2521	1.6616	1.2690	1.6243	1.2868	1.5890	60
1	1.2363	1.7006	1.2524	1.6610	1.2693	1.6237	1.2871	1.5884	59
2	1.2366	1.6999	1.2527	1.6604	1.2696	1.6231	1.2874	1.5879	58
3	1.2369	1.6993	1.2530	1.6597	1.2699	1.6225	1.2877	1.5873	57
4	1.2371	1.6986	1.2532	1.6591	1.2702	1.6219	1.2880	1.5867	56
5	1.2374	1.6979	1.2535	1.6584	1.2705	1.6213	1.2883	1.5862	55
6	1.2376	1.6972	1.2538	1.6578	1.2707	1.6206	1.2886	1.5856	54
7	1.2379	1.6965	1.2541	1.6572	1.2710	1.6200	1.2889	1.5850	53
8	1.2382	1.6959	1.2543	1.6565	1.2713	1.6194	1.2892	1.5845	52
9	1.2384	1.6952	1.2546	1.6559	1.2716	1.6188	1.2895	1.5839	51
10	1.2387	1.6945	1.2549	1.6553	1.2719	1.6183	1.2898	1.5833	50
11	1.2390	1.6938	1.2552	1.6546	1.2722	1.6177	1.2901	1.5828	49
12	1.2392	1.6932	1.2554	1.6540	1.2725	1.6171	1.2904	1.5822	48
13	1.2395	1.6925	1.2557	1.6534	1.2728	1.6165	1.2907	1.5816	47
14	1.2397	1.6918	1.2560	1.6527	1.2731	1.6159	1.2910	1.5811	46
15	1.2400	1.6912	1.2563	1.6521	1.2734	1.6153	1.2913	1.5805	45
16	1.2403	1.6905	1.2566	1.6515	1.2737	1.6147	1.2916	1.5799	44
17	1.2405	1.6898	1.2568	1.6508	1.2740	1.6141	1.2919	1.5794	43
18	1.2408	1.6892	1.2571	1.6502	1.2742	1.6135	1.2923	1.5788	42
19	1.2411	1.6885	1.2574	1.6496	1.2745	1.6129	1.2926	1.5783	41
20	1.2413	1.6878	1.2577	1.6489	1.2748	1.6123	1.2929	1.5777	40
21	1.2416	1.6871	1.2579	1.6483	1.2751	1.6117	1.2932	1.5771	39
22	1.2419	1.6865	1.2582	1.6477	1.2754	1.6111	1.2935	1.5766	38
23	1.2421	1.6858	1.2585	1.6471	1.2757	1.6105	1.2938	1.5760	37
24	1.2424	1.6851	1.2588	1.6464	1.2760	1.6099	1.2941	1.5755	36
25	1.2427	1.6845	1.2591	1.6458	1.2763	1.6093	1.2944	1.5749	35
26	1.2429	1.6838	1.2593	1.6452	1.2766	1.6087	1.2947	1.5744	34
27	1.2432	1.6832	1.2596	1.6445	1.2769	1.6082	1.2950	1.5738	33
28	1.2435	1.6825	1.2599	1.6439	1.2772	1.6076	1.2953	1.5732	32
29	1.2437	1.6818	1.2602	1.6433	1.2775	1.6070	1.2957	1.5727	31
30	1.2440	1.6812	1.2605	1.6427	1.2778	1.6064	1.2960	1.5721	30
31	1.2443	1.6805	1.2608	1.6421	1.2781	1.6058	1.2963	1.5716	29
32	1.2445	1.6799	1.2610	1.6414	1.2784	1.6052	1.2966	1.5710	28
33	1.2448	1.6792	1.2613	1.6408	1.2787	1.6046	1.2969	1.5705	27
34	1.2451	1.6785	1.2616	1.6402	1.2790	1.6040	1.2972	1.5699	26
35	1.2453	1.6779	1.2619	1.6396	1.2793	1.6035	1.2975	1.5694	25
36	1.2456	1.6772	1.2622	1.6390	1.2796	1.6029	1.2978	1.5688	24
37	1.2459	1.6766	1.2624	1.6383	1.2798	1.6023	1.2981	1.5683	23
38	1.2462	1.6759	1.2627	1.6377	1.2802	1.6017	1.2985	1.5677	22
39	1.2464	1.6753	1.2630	1.6371	1.2804	1.6011	1.2988	1.5672	21
40	1.2467	1.6746	1.2633	1.6365	1.2807	1.6005	1.2991	1.5666	20
41	1.2470	1.6739	1.2636	1.6359	1.2810	1.6000	1.2994	1.5661	19
42	1.2472	1.6733	1.2639	1.6352	1.2813	1.5994	1.2997	1.5655	18
43	1.2475	1.6726	1.2641	1.6346	1.2816	1.5988	1.3000	1.5650	17
44	1.2478	1.6720	1.2644	1.6340	1.2819	1.5982	1.3003	1.5644	16
45	1.2480	1.6713	1.2647	1.6334	1.2822	1.5976	1.3007	1.5639	15
46	1.2483	1.6707	1.2650	1.6328	1.2825	1.5971	1.3010	1.5633	14
47	1.2486	1.6700	1.2653	1.6322	1.2828	1.5965	1.3013	1.5628	13
48	1.2489	1.6694	1.2656	1.6316	1.2831	1.5959	1.3016	1.5622	12
49	1.2491	1.6687	1.2659	1.6310	1.2834	1.5953	1.3019	1.5617	11
50	1.2494	1.6681	1.2661	1.6303	1.2837	1.5947	1.3022	1.5611	10
51	1.2497	1.6674	1.2664	1.6297	1.2840	1.5942	1.3025	1.5606	9
52	1.2499	1.6668	1.2667	1.6291	1.2843	1.5936	1.3029	1.5600	8
53	1.2502	1.6661	1.2670	1.6285	1.2846	1.5930	1.3032	1.5595	7
54	1.2505	1.6655	1.2673	1.6279	1.2849	1.5924	1.3035	1.5590	6
55	1.2508	1.6649	1.2676	1.6273	1.2852	1.5919	1.3038	1.5584	5
56	1.2510	1.6642	1.2679	1.6267	1.2855	1.5913	1.3041	1.5579	4
57	1.2513	1.6636	1.2682	1.6261	1.2859	1.5907	1.3045	1.5573	3
58	1.2516	1.6629	1.2684	1.6255	1.2862	1.5902	1.3048	1.5568	2
59	1.2519	1.6623	1.2687	1.6249	1.2865	1.5896	1.3051	1.5563	1
60	1.2521	1.6616	1.2690	1.6243	1.2868	1.5890	1.3054	1.5557	0
′	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	′
	53°		52°		51°		50°		

	40°		41°		42°		43°		
′	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	′
0	**1.3054**	**1.5557**	**1.3250**	**1.5242**	**1.3456**	**1.4945**	**1.3673**	**1.4663**	**60**
1	1.3057	1.5552	1.3253	1.5237	1.3460	1.4940	1.3677	1.4658	59
2	1.3060	1.5546	1.3257	1.5232	1.3463	1.4935	1.3681	1.4654	58
3	1.3064	1.5541	1.3260	1.5227	1.3467	1.4930	1.3684	1.4649	57
4	1.3067	1.5536	1.3264	1.5222	1.3470	1.4925	1.3688	1.4645	56
5	**1.3070**	**1.5530**	**1.3267**	**1.5217**	**1.3474**	**1.4921**	**1.3692**	**1.4640**	**55**
6	1.3073	1.5525	1.3270	1.5212	1.3478	1.4916	1.3696	1.4635	54
7	1.3076	1.5520	1.3274	1.5207	1.3481	1.4911	1.3699	1.4631	53
8	1.3080	1.5514	1.3277	1.5202	1.3485	1.4906	1.3703	1.4626	52
9	1.3083	1.5509	1.3280	1.5197	1.3488	1.4901	1.3707	1.4622	51
10	**1.3086**	**1.5504**	**1.3284**	**1.5192**	**1.3492**	**1.4897**	**1.3711**	**1.4617**	**50**
11	1.3089	1.5498	1.3287	1.5187	1.3495	1.4892	1.3714	1.4613	49
12	1.3092	1.5493	1.3291	1.5182	1.3499	1.4887	1.3718	1.4608	48
13	1.3096	1.5488	1.3294	1.5177	1.3502	1.4882	1.3722	1.4604	47
14	1.3099	1.5482	1.3297	1.5172	1.3506	1.4878	1.3726	1.4599	46
15	**1.3102**	**1.5477**	**1.3301**	**1.5167**	**1.3510**	**1.4873**	**1.3729**	**1.4595**	**45**
16	1.3105	1.5472	1.3304	1.5162	1.3513	1.4868	1.3733	1.4590	44
17	1.3109	1.5466	1.3307	1.5156	1.3517	1.4863	1.3737	1.4586	43
18	1.3112	1.5461	1.3311	1.5151	1.3521	1.4859	1.3741	1.4581	42
19	1.3115	1.5456	1.3314	1.5146	1.3524	1.4854	1.3744	1.4577	41
20	**1.3118**	**1.5450**	**1.3318**	**1.5141**	**1.3527**	**1.4849**	**1.3748**	**1.4572**	**40**
21	1.3122	1.5445	1.3321	1.5136	1.3531	1.4844	1.3752	1.4568	39
22	1.3125	1.5440	1.3325	1.5131	1.3535	1.4840	1.3756	1.4563	38
23	1.3128	1.5434	1.3328	1.5126	1.3538	1.4835	1.3759	1.4559	37
24	1.3131	1.5429	1.3331	1.5121	1.3542	1.4830	1.3763	1.4554	36
25	**1.3135**	**1.5424**	**1.3335**	**1.5116**	**1.3545**	**1.4825**	**1.3767**	**1.4550**	**35**
26	1.3138	1.5419	1.3338	1.5111	1.3549	1.4821	1.3771	1.4545	34
27	1.3141	1.5413	1.3342	1.5107	1.3553	1.4816	1.3775	1.4541	33
28	1.3144	1.5408	1.3345	1.5102	1.3556	1.4811	1.3778	1.4536	32
29	1.3148	1.5403	1.3348	1.5097	1.3560	1.4807	1.3782	1.4532	31
30	**1.3151**	**1.5398**	**1.3352**	**1.5092**	**1.3563**	**1.4802**	**1.3786**	**1.4527**	**30**
31	1.3154	1.5392	1.3355	1.5087	1.3567	1.4797	1.3790	1.4523	29
32	1.3157	1.5387	1.3359	1.5082	1.3571	1.4792	1.3794	1.4518	28
33	1.3161	1.5382	1.3362	1.5077	1.3574	1.4788	1.3797	1.4514	27
34	1.3164	1.5377	1.3366	1.5072	1.3578	1.4783	1.3801	1.4510	26
35	**1.3167**	**1.5372**	**1.3369**	**1.5067**	**1.3582**	**1.4778**	**1.3805**	**1.4505**	**25**
36	1.3171	1.5366	1.3373	1.5062	1.3585	1.4774	1.3809	1.4501	24
37	1.3174	1.5361	1.3376	1.5057	1.3589	1.4769	1.3813	1.4496	23
38	1.3177	1.5356	1.3379	1.5052	1.3592	1.4764	1.3817	1.4492	22
39	1.3180	1.5351	1.3383	1.5047	1.3596	1.4760	1.3820	1.4487	21
40	**1.3184**	**1.5345**	**1.3386**	**1.5042**	**1.3600**	**1.4755**	**1.3824**	**1.4483**	**20**
41	1.3187	1.5340	1.3390	1.5037	1.3603	1.4750	1.3828	1.4479	19
42	1.3190	1.5335	1.3393	1.5032	1.3607	1.4746	1.3832	1.4474	18
43	1.3194	1.5330	1.3397	1.5027	1.3611	1.4741	1.3836	1.4470	17
44	1.3197	1.5325	1.3400	1.5023	1.3614	1.4736	1.3840	1.4465	16
45	**1.3200**	**1.5320**	**1.3404**	**1.5018**	**1.3618**	**1.4732**	**1.3843**	**1.4461**	**15**
46	1.3203	1.5314	1.3407	1.5013	1.3622	1.4727	1.3847	1.4457	14
47	1.3207	1.5309	1.3411	1.5008	1.3625	1.4723	1.3851	1.4452	13
48	1.3210	1.5304	1.3414	1.5003	1.3629	1.4718	1.3855	1.4448	12
49	1.3213	1.5299	1.3418	1.4998	1.3633	1.4713	1.3859	1.4443	11
50	**1.3217**	**1.5294**	**1.3421**	**1.4993**	**1.3636**	**1.4709**	**1.3863**	**1.4439**	**10**
51	1.3220	1.5289	1.3425	1.4988	1.3640	1.4704	1.3867	1.4435	9
52	1.3223	1.5283	1.3428	1.4984	1.3644	1.4699	1.3870	1.4430	8
53	1.3227	1.5278	1.3432	1.4979	1.3647	1.4695	1.3874	1.4426	7
54	1.3230	1.5273	1.3435	1.4974	1.3651	1.4690	1.3878	1.4422	6
55	**1.3233**	**1.5268**	**1.3439**	**1.4969**	**1.3655**	**1.4686**	**1.3882**	**1.4417**	**5**
56	1.3237	1.5263	1.3442	1.4964	1.3658	1.4681	1.3886	1.4413	4
57	1.3240	1.5258	1.3446	1.4959	1.3662	1.4677	1.3890	1.4409	3
58	1.3243	1.5253	1.3449	1.4954	1.3666	1.4672	1.3894	1.4404	2
59	1.3247	1.5248	1.3453	1.4950	1.3670	1.4667	1.3898	1.4400	1
60	**1.3250**	**1.5243**	**1.3456**	**1.4945**	**1.3673**	**1.4663**	**1.3902**	**1.4396**	**0**
′	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	Co-s't	Secant	′
	49°		48°		47°		46°		

	44°				44°				44°		
′	Secant	Co-s't	′	′	Secant	Co-s't	′	′	Secant	Co-s't	′
0	**1.3902**	**1.4396**	**60**	**21**	**1.3984**	**1.4305**	**39**	**41**	**1.4065**	**1.4221**	**19**
1	1.3906	1.4391	59	22	1.3988	1.4301	38	42	1.4069	1.4217	18
2	1.3909	1.4387	58	23	1.3992	1.4297	37	43	1.4073	1.4213	17
3	1.3913	1.4383	57	24	1.3996	1.4293	36	44	1.4077	1.4208	16
4	1.3917	1.4378	56	25	1.4000	1.4288	35	45	1.4081	1.4204	15
5	**1.3921**	**1.4374**	**55**	**26**	**1.4004**	**1.4284**	**34**	**46**	**1.4085**	**1.4200**	**14**
6	1.3925	1.4370	54	27	1.4008	1.4280	33	47	1.4089	1.4196	13
7	1.3929	1.4365	53	28	1.4012	1.4276	32	48	1.4093	1.4192	12
8	1.3933	1.4361	52	29	1.4016	1.4271	31	49	1.4097	1.4188	11
9	1.3937	1.4357	51	30	1.4020	1.4267	30	50	1.4101	1.4183	10
10	**1.3941**	**1.4352**	**50**	**31**	**1.4024**	**1.4263**	**29**	**51**	**1.4105**	**1.4179**	**9**
11	1.3945	1.4348	49	32	1.4028	1.4259	28	52	1.4109	1.4175	8
12	1.3949	1.4344	48	33	1.4032	1.4255	27	53	1.4113	1.4171	7
13	1.3953	1.4340	47	34	1.4036	1.4250	26	54	1.4117	1.4167	6
14	1.3957	1.4335	46	35	1.4040	1.4246	25	55	1.4122	1.4163	5
15	**1.3961**	**1.4331**	**45**	**36**	**1.4044**	**1.4242**	**24**	**56**	**1.4126**	**1.4159**	**4**
16	1.3965	1.4327	44	37	1.4048	1.4238	23	57	1.4130	1.4154	3
17	1.3969	1.4322	43	38	1.4052	1.4234	22	58	1.4134	1.4150	2
18	1.3972	1.4318	42	39	1.4057	1.4229	21	59	1.4138	1.4146	1
19	1.3976	1.4314	41	40	1.4061	1.4225	20	60	1.4142	1.4142	0
20	**1.3980**	**1.4310**	**40**								
′	Co-s't	Secant	′	′	Co-s't	Secant	′	′	Co-s't	Secant	′
	45°				45°				45°		

NOTE.—In this and preceding trigonometrical tables for angles between 45° and 90° read from right-hand page to left-hand page and from bottom of page upward.

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
	Circum.	Area.					
0	**000.00**	**0000.00**	**0000**	**00000**	**0.0000**	**0.0000**	**00.0000**
1	3.142	0.7854	1	1	1.0000	1.0000	1000.00
2	6.283	3.1416	4	8	1.4142	1.2599	500.000
3	9.425	7.0686	9	27	1.7321	1.4422	333.333
4	12.566	12.5664	16	64	2.0000	1.5874	250.000
5	**15.708**	**19.6350**	**25**	**125**	**2.2361**	**1.7100**	**200.000**
6	18.850	28.2743	36	216	2.4495	1.8171	166.667
7	21.991	38.4845	49	343	2.6458	1.9129	142.857
8	25.133	50.2655	64	512	2.8284	2.0000	125.000
9	28.274	63.6173	81	729	3.0000	2.0801	111.111
10	**31.416**	**78.5398**	**100**	**1000**	**3.1623**	**2.1544**	**100.000**
11	34.558	95.0332	121	1331	3.3166	2.2240	90.9091
12	37.699	113.097	144	1728	3.4641	2.2894	83.3333
13	40.841	132.732	169	2197	3.6056	2.3513	76.9231
14	43.982	153.938	196	2744	3.7417	2.4101	71.4286
15	**47.124**	**176.715**	**225**	**3375**	**3.8730**	**2.4662**	**66.6667**
16	50.265	201.062	256	4096	4.0000	2.5198	62.5000
17	53.407	226.980	289	4913	4.1231	2.5713	58.8235
18	56.549	254.469	324	5832	4.2426	2.6207	55.5556
19	59.690	283.529	361	6859	4.3589	2.6684	52.6316
20	**62.832**	**314.159**	**400**	**8000**	**4.4721**	**2.7144**	**50.0000**
21	65.973	346.361	441	9261	4.5826	2.7589	47.6190
22	69.115	380.133	484	10648	4.6904	2.8020	45.4545
23	72.257	415.476	529	12167	4.7958	2.8439	43.4783
24	75.398	452.389	576	13824	4.8990	2.8845	41.6667
25	**78.540**	**490.874**	**625**	**15625**	**5.0000**	**2.9240**	**40.0000**
26	81.681	530.929	676	17576	5.0990	2.9625	38.4615
27	84.823	572.555	729	19683	5.1962	3.0000	37.0370
28	87.965	615.752	784	21952	5.2915	3.0366	35.7143
29	91.106	660.520	841	24389	5.3852	3.0723	34.4828
30	**94.248**	**706.858**	**900**	**27000**	**5.4772**	**3.1072**	**33.3333**
31	97.389	754.768	961	29791	5.5678	3.1414	32.2581
32	100.531	804.248	1024	32768	5.6569	3.1748	31.2500
33	103.673	855.299	1089	35937	5.7446	3.2075	30.3030
34	106.814	907.920	1156	39304	5.8310	3.2396	29.4118
35	**109.956**	**962.113**	**1225**	**42875**	**5.9161**	**3.2711**	**28.5714**
36	113.097	1017.88	1296	46656	6.0000	3.3019	27.7778
37	116.239	1075.21	1369	50653	6.0828	3.3322	27.0270
38	119.381	1134.11	1444	54872	6.1644	3.3620	26.3158
39	122.522	1194.59	1521	59319	6.2450	3.3912	25.6410
40	**125.66**	**1256.64**	**1600**	**64000**	**6.3246**	**3.4200**	**25.0000**
41	128.81	1320.25	1681	68921	6.4031	3.4482	24.3902
42	131.95	1385.44	1764	74088	6.4807	3.4760	23.8095
43	135.09	1452.20	1849	79507	6.5574	3.5034	23.2558
44	138.23	1520.53	1936	85184	6.6332	3.5303	22.7273
45	**141.37**	**1590.43**	**2025**	**91125**	**6.7082**	**3.5569**	**22.2222**
46	144.51	1661.90	2116	97336	6.7823	3.5830	21.7391
47	147.65	1734.94	2209	103823	6.8557	3.6088	21.2766
48	150.80	1809.56	2304	110592	6.9282	3.6342	20.8333
49	153.94	1885.74	2401	117649	7.0000	3.6593	20.4082

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
	Circum.	Area.					
50	**157.08**	**1963.50**	**2500**	**125000**	**7.0711**	**3.6840**	**20.0000**
51	160.22	2042.82	2601	132651	7.1414	3.7084	19.6078
52	163.36	2123.72	2704	140608	7.2111	3.7325	19.2308
53	166.50	2206.18	2809	148877	7.2801	3.7563	18.8679
54	169.65	2290.22	2916	157464	7.3485	3.7798	18.5185
55	**172.79**	**2375.83**	**3025**	**166375**	**7.4162**	**3.8030**	**18.1818**
56	175.93	2463.01	3136	175616	7.4833	3.8259	17.8571
57	179.07	2551.76	3249	185193	7.5498	3.8485	17.5439
58	182.21	2642.08	3364	195112	7.6158	3.8709	17.2414
59	185.35	2733.97	3481	205379	7.6811	3.8930	16.9492
60	**188.50**	**2827.43**	**3600**	**216000**	**7.7460**	**3.9149**	**16.6667**
61	191.64	2922.47	3721	226981	7.8102	3.9365	16.3934
62	194.78	3019.07	3844	238328	7.8740	3.9579	16.1290
63	197.92	3117.25	3969	250047	7.9373	3.9791	15.8730
64	201.06	3216.99	4096	262144	8.0000	4.0000	15.6250
65	**204.20**	**3318.31**	**4225**	**274625**	**8.0623**	**4.0207**	**15.3846**
66	207.35	3421.19	4356	287496	8.1240	4.0412	15.1515
67	210.49	3525.65	4489	300763	8.1854	4.0615	14.9254
68	213.63	3631.68	4624	314432	8.2462	4.0817	14.7059
69	216.77	3739.28	4761	328509	8.3066	4.1016	14.4928
70	**219.91**	**3848.45**	**4900**	**343000**	**8.3666**	**4.1213**	**14.2857**
71	223.05	3959.19	5041	357911	8.4261	4.1408	14.0845
72	226.19	4071.50	5184	373248	8.4853	4.1602	13.8889
73	229.34	4185.39	5329	389017	8.5440	4.1793	13.6986
74	232.48	4300.84	5476	405224	8.6023	4.1983	13.5135
75	**235.62**	**4417.86**	**5625**	**421875**	**8.6603**	**4.2172**	**13.3333**
76	238.76	4536.46	5776	438976	8.7178	4.2358	13.1579
77	241.90	4656.63	5929	456533	8.7750	4.2543	12.9870
78	245.04	4778.36	6084	474552	8.8318	4.2727	12.8205
79	248.19	4901.67	6241	493039	8.8882	4.2908	12.6582
80	**251.33**	**5026.55**	**6400**	**512000**	**8.9443**	**4.3089**	**12.5000**
81	254.47	5153.00	6561	531441	9.0000	4.3267	12.3457
82	257.61	5281.02	6724	551368	9.0554	4.3445	12.1951
83	260.75	5410.61	6889	571787	9.1104	4.3621	12.0482
84	263.89	5541.77	7056	592704	9.1652	4.3795	11.9048
85	**267.04**	**5674.50**	**7225**	**614125**	**9.2195**	**4.3968**	**11.7647**
86	270.18	5808.80	7396	636056	9.2736	4.4140	11.6279
87	273.32	5944.68	7569	658503	9.3274	4.4310	11.4943
88	276.46	6082.12	7744	681472	9.3808	4.4480	11.3636
89	279.60	6221.14	7921	704969	9.4340	4.4647	11.2360
90	**282.74**	**6361.73**	**8100**	**729000**	**9.4868**	**4.4814**	**11.1111**
91	285.88	6503.88	8281	753571	9.5394	4.4979	10.9890
92	289.03	6647.61	8464	778688	9.5917	4.5144	10.8696
93	292.17	6792.91	8649	804357	9.6437	4.5307	10.7527
94	295.31	6939.78	8836	830584	9.6954	4.5468	10.6383
95	**298.45**	**7088.22**	**9025**	**857375**	**9.7468**	**4.5629**	**10.5263**
96	301.59	7238.23	9216	884736	9.7980	4.5789	10.4167
97	304.73	7389.81	9409	912673	9.8489	4.5947	10.3093
98	307.88	7542.96	9604	941192	9.8995	4.6104	10.2041
99	311.02	7697.69	9801	970299	9.9499	4.6261	10.1010

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
	Circum.	Area.					
100	**314.16**	**7853.98**	**10000**	**1000000**	**10.0000**	**4.6416**	**10.00000**
101	317.30	8011.85	10201	1030301	10.0499	4.6570	9.90099
102	320.44	8171.28	10404	1061208	10.0995	4.6723	9.80392
103	323.58	8332.29	10609	1092727	10.1489	4.6875	9.70874
104	326.73	8494.87	10816	1124864	10.1980	4.7027	9.61538
105	**329.87**	**8659.01**	**11025**	**1157625**	**10.2470**	**4.7177**	**9.52381**
106	333.01	8824.73	11236	1191016	10.2956	4.7326	9.43396
107	336.15	8992.02	11449	1225043	10.3441	4.7475	9.34579
108	339.29	9160.88	11664	1259712	10.3923	4.7622	9.25926
109	342.43	9331.32	11881	1295029	10.4403	4.7769	9.17431
110	**345.58**	**9503.32**	**12100**	**1331000**	**10.4881**	**4.7914**	**9.09091**
111	348.72	9676.89	12321	1367631	10.5357	4.8059	9.00901
112	351.86	9852.03	12544	1404928	10.5830	4.8203	8.92857
113	355.00	10028.7	12769	1442897	10.6301	4.8346	8.84956
114	358.14	10207.0	12996	1481544	10.6771	4.8488	8.77193
115	**361.28**	**10386.9**	**13225**	**1520875**	**10.7238**	**4.8629**	**8.69565**
116	364.42	10568.3	13456	1560896	10.7703	4.8770	8.62069
117	367.57	10751.3	13689	1601613	10.8167	4.8910	8.54701
118	370.71	10935.9	13924	1643032	10.8628	4.9049	8.47458
119	373.85	11122.0	14161	1685159	10.9087	4.9187	8.40336
120	**376.99**	**11309.7**	**14400**	**1728000**	**10.9545**	**4.9324**	**8.33333**
121	380.13	11499.0	14641	1771561	11.0000	4.9461	8.26446
122	383.27	11689.9	14884	1815848	11.0454	4.9597	8.19672
123	386.42	11882.3	15129	1860867	11.0905	4.9732	8.13008
124	389.56	12076.3	15376	1906624	11.1355	4.9866	8.06452
125	**392.70**	**12271.8**	**15625**	**1953125**	**11.1803**	**5.0000**	**8.00000**
126	395.84	12469.0	15876	2000376	11.2250	5.0133	7.93651
127	398.98	12667.7	16129	2048383	11.2694	5.0265	7.87402
128	402.12	12868.0	16384	2097152	11.3137	5.0397	7.81250
129	405.27	13069.8	16641	2146689	11.3578	5.0528	7.75194
130	**408.41**	**13273.2**	**16900**	**2197000**	**11.4018**	**5.0658**	**7.69231**
131	411.55	13478.2	17161	2248091	11.4455	5.0788	7.63359
132	414.69	13684.8	17424	2299968	11.4891	5.0916	7.57576
133	417.83	13892.9	17689	2352637	11.5326	5.1045	7.51880
134	420.97	14102.6	17956	2406104	11.5758	5.1172	7.46269
135	**424.12**	**14313.9**	**18225**	**2460375**	**11.6190**	**5.1299**	**7.40741**
136	427.26	14526.7	18496	2515456	11.6619	5.1426	7.35294
137	430.40	14741.1	18769	2571353	11.7047	5.1551	7.29927
138	433.54	14957.1	19044	2628072	11.7473	5.1676	7.24638
139	436.68	15174.7	19321	2685619	11.7898	5.1801	7.19424
140	**439.82**	**15393.8**	**19600**	**2744000**	**11.8322**	**5.1925**	**7.14286**
141	442.96	15614.5	19881	2803221	11.8743	5.2048	7.09220
142	446.11	15836.8	20164	2863288	11.9164	5.2171	7.04225
143	449.25	16060.6	20449	2924207	11.9583	5.2293	6.99301
144	452.39	16286.0	20736	2985984	12.0000	5.2415	6.94444
145	**455.53**	**16513.0**	**21025**	**3048625**	**12.0416**	**5.2536**	**6.89655**
146	458.67	16741.5	21316	3112136	12.0830	5.2656	6.84932
147	461.81	16971.7	21609	3176523	12.1244	5.2776	6.80272
148	464.96	17203.4	21904	3241792	12.1655	5.2896	6.75676
149	468.10	17436.6	22201	3307949	12.2066	5.3015	6.71141

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
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150	**471.24**	**17671.5**	**22500**	**3375000**	**12.2474**	**5.3133**	**6.66667**
151	474.38	17907.9	22801	3442951	12.2882	5.3251	6.62252
152	477.52	18145.8	23104	3511808	12.3288	5.3368	6.57895
153	480.66	18385.4	23409	3581577	12.3693	5.3485	6.53595
154	483.81	18626.5	23716	3652264	12.4097	5.3601	6.49351
155	**486.95**	**18869.2**	**24025**	**3723875**	**12.4499**	**5.3717**	**6.45161**
156	490.09	19113.4	24336	3796416	12.4900	5.3832	6.41026
157	493.23	19359.3	24649	3869893	12.5300	5.3947	6.36943
158	496.37	19606.7	24964	3944312	12.5698	5.4061	6.32911
159	499.51	19855.7	25281	4019679	12.6095	5.4175	6.28931
160	**502.65**	**20106.2**	**25600**	**4096000**	**12.6491**	**5.4288**	**6.25000**
161	505.80	20358.3	25921	4173281	12.6886	5.4401	6.21118
162	508.94	20612.0	26244	4251528	12.7279	5.4514	6.17284
163	512.08	20867.2	26569	4330747	12.7671	5.4626	6.13497
164	515.22	21124.1	26896	4410944	12.8062	5.4737	6.09756
165	**518.36**	**21382.5**	**27225**	**4492125**	**12.8452**	**5.4848**	**6.06061**
166	521.50	21642.4	27556	4574296	12.8841	5.4959	6.02410
167	524.65	21904.0	27889	4657463	12.9228	5.5069	5.98802
168	527.79	22167.1	28224	4741632	12.9615	5.5178	5.95238
169	530.93	22431.8	28561	4826809	13.0000	5.5288	5.91716
170	**534.07**	**22698.0**	**28900**	**4913000**	**13.0384**	**5.5397**	**5.88235**
171	537.21	22965.8	29241	5000211	13.0767	5.5505	5.84795
172	540.35	23235.2	29584	5088448	13.1149	5.5613	5.81395
173	543.50	23506.2	29929	5177717	13.1529	5.5721	5.78035
174	546.64	23778.7	30276	5268024	13.1909	5.5828	5.74713
175	**549.78**	**24052.8**	**30625**	**5359375**	**13.2288**	**5.5934**	**5.71429**
176	552.92	24328.5	30976	5451776	13.2665	5.6041	5.68182
177	556.06	24605.7	31329	5545233	13.3041	5.6147	5.64972
178	559.20	24884.6	31684	5639752	13.3417	5.6252	5.61798
179	562.35	25164.9	32041	5735339	13.3791	5.6357	5.58659
180	**565.49**	**25446.9**	**32400**	**5832000**	**13.4164**	**5.6462**	**5.55556**
181	568.63	25730.4	32761	5929741	13.4536	5.6567	5.52486
182	571.77	26015.5	33124	6028568	13.4907	5.6671	5.49451
183	574.91	26302.2	33489	6128487	13.5277	5.6774	5.46448
184	578.05	26590.4	33856	6229504	13.5647	5.6877	5.43478
185	**581.19**	**26880.3**	**34225**	**6331625**	**13.6015**	**5.6980**	**5.40541**
186	584.34	27171.6	34596	6434856	13.6382	5.7083	5.37634
187	587.48	27464.6	34969	6539203	13.6748	5.7185	5.34759
188	590.62	27759.1	35344	6644672	13.7113	5.7287	5.31915
189	593.76	28055.2	35721	6751269	13.7477	5.7388	5.29101
190	**596.90**	**28352.9**	**36100**	**6859000**	**13.7840**	**5.7489**	**5.26316**
191	600.04	28652.1	36481	6967871	13.8203	5.7590	5.23560
192	603.19	28952.9	36864	7077888	13.8564	5.7690	5.20833
193	606.33	29255.3	37249	7189057	13.8924	5.7790	5.18135
194	609.47	29559.2	37636	7301384	13.9284	5.7890	5.15464
195	**612.61**	**29864.8**	**38025**	**7414875**	**13.9642**	**5.7989**	**5.12821**
196	615.75	30171.9	38416	7529536	14.0000	5.8088	5.10204
197	618.89	30480.5	38809	7645373	14.0357	5.8186	5.07614
198	622.04	30790.7	39204	7762392	14.0712	5.8285	5.05051
199	625.18	31102.6	39601	7880599	14.1067	5.8383	5.02513

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200	**628.32**	**31415.9**	**40000**	**8000000**	**14.1421**	**5.8480**	**5.00000**
201	631.46	31730.9	40401	8120601	14.1774	5.8578	4.97512
202	634.60	32047.4	40804	8242408	14.2127	5.8675	4.95050
203	637.74	32365.5	41209	8365427	14.2478	5.8771	4.92611
204	640.89	32685.1	41616	8489664	14.2829	5.8868	4.90196
205	**644.03**	**33006.4**	**42025**	**8615125**	**14.3178**	**5.8964**	**4.87805**
206	647.17	33329.2	42436	8741816	14.3527	5.9059	4.85437
207	650.31	33653.5	42849	8869743	14.3875	5.9155	4.83092
208	653.45	33979.5	43264	8998912	14.4222	5.9250	4.80769
209	656.59	34307.0	43681	9129329	14.4568	5.9345	4.78469
210	**659.73**	**34636.1**	**44100**	**9261000**	**14.4914**	**5.9439**	**4.76190**
211	662.88	34966.7	44521	9393931	14.5258	5.9533	4.73934
212	666.02	35298.9	44944	9528128	14.5602	5.9627	4.71698
213	669.16	35632.7	45369	9663597	14.5945	5.9721	4.69484
214	672.30	35968.1	45796	9800344	14.6287	5.9814	4.67290
215	**675.44**	**36305.0**	**46225**	**9938375**	**14.6629**	**5.9907**	**4.65116**
216	678.58	36643.5	46656	10077696	14.6969	6.0000	4.62963
217	681.73	36983.6	47089	10218313	14.7309	6.0092	4.60829
218	684.87	37325.3	47524	10360232	14.7648	6.0185	4.58716
219	688.01	37668.5	47961	10503459	14.7986	6.0277	4.56621
220	**691.15**	**38013.3**	**48400**	**10648000**	**14.8324**	**6.0368**	**4.54545**
221	694.29	38359.6	48841	10793861	14.8661	6.0459	4.52489
222	697.43	38707.6	49284	10941048	14.8997	6.0550	4.50450
223	700.58	39057.1	49729	11089567	14.9332	6.0641	4.48431
224	703.72	39408.1	50176	11239424	14.9666	6.0732	4.46429
225	**706.86**	**39760.8**	**50625**	**11390625**	**15.0000**	**6.0822**	**4.44444**
226	710.00	40115.0	51076	11543176	15.0333	6.0912	4.42478
227	713.14	40470.8	51529	11697083	15.0665	6.1002	4.40529
228	716.28	40828.1	51984	11852352	15.0997	6.1091	4.38596
229	719.42	41187.1	52441	12008989	15.1327	6.1180	4.36681
230	**722.57**	**41547.6**	**52900**	**12167000**	**15.1658**	**6.1269**	**4.34783**
231	725.71	41909.6	53361	12326391	15.1987	6.1358	4.32900
232	728.85	42273.3	53824	12487168	15.2315	6.1446	4.31034
233	731.99	42638.5	54289	12649337	15.2643	6.1534	4.29185
234	735.13	43005.3	54756	12812904	15.2971	6.1622	4.27350
235	**738.27**	**43373.6**	**55225**	**12977875**	**15.3297**	**6.1710**	**4.25532**
236	741.42	43743.5	55696	13144256	15.3623	6.1797	4.23729
237	744.56	44115.0	56169	13312053	15.3948	6.1885	4.21941
238	747.70	44488.1	56644	13481272	15.4272	6.1972	4.20168
239	750.84	44862.7	57121	13651919	15.4596	6.2058	4.18410
240	**753.98**	**45238.9**	**57600**	**13824000**	**15.4919**	**6.2145**	**4.16667**
241	757.12	45616.7	58081	13997521	15.5242	6.2231	4.14938
242	760.27	45996.1	58564	14172488	15.5563	6.2317	4.13223
243	763.41	46377.0	59049	14348907	15.5885	6.2403	4.11523
244	766.55	46759.5	59536	14526784	15.6205	6.2488	4.09836
245	**769.69**	**47143.5**	**60025**	**14706125**	**15.6525**	**6.2573**	**4.08163**
246	772.83	47529.2	60516	14886936	15.6844	6.2658	4.06504
247	775.97	47916.4	61009	15069223	15.7162	6.2743	4.04858
248	779.12	48305.1	61504	15252992	15.7480	6.2828	4.03226
249	782.26	48695.5	62001	15438249	15.7797	6.2912	4.01606

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	Circum.	Area.					
250	**785.40**	**49087.4**	**62500**	**15625000**	**15.8114**	**6.2996**	**4.00000**
251	788.54	49480.9	63001	15813251	15.8430	6.3080	3.98406
252	791.68	49875.9	63504	16003008	15.8745	6.3164	3.96825
253	794.82	50272.6	64009	16194277	15.9060	6.3247	3.95257
254	797.96	50670.7	64516	16387064	15.9374	6.3330	3.93701
255	**801.11**	**51070.5**	**65025**	**16581375**	**15.9687**	**6.3413**	**3.92157**
256	804.25	51471.9	65536	16777216	16.0000	6.3496	3.90625
257	807.39	51874.8	66049	16974593	16.0312	6.3579	3.89105
258	810.53	52279.2	66564	17173512	16.0624	6.3661	3.87597
259	813.67	52685.3	67081	17373979	16.0935	6.3743	3.86100
260	**816.81**	**53092.9**	**67600**	**17576000**	**16.1245**	**6.3825**	**3.84615**
261	819.96	53502.1	68121	17779581	16.1555	6.3907	3.83142
262	823.10	53912.9	68644	17984728	16.1864	6.3988	3.81679
263	826.24	54325.2	69169	18191447	16.2173	6.4070	3.80228
264	829.38	54739.1	69696	18399744	16.2481	6.4151	3.78788
265	**832.52**	**55154.6**	**70225**	**18609625**	**16.2788**	**6.4232**	**3.77358**
266	835.66	55571.6	70756	18821096	16.3095	6.4312	3.75940
267	838.81	55990.3	71289	19034163	16.3401	6.4393	3.74532
268	841.95	56410.4	71824	19248832	16.3707	6.4473	3.73134
269	845.09	56832.2	72361	19465109	16.4012	6.4553	3.71747
270	**848.23**	**57255.5**	**72900**	**19683000**	**16.4317**	**6.4633**	**3.70370**
271	851.37	57680.4	73441	19902511	16.4621	6.4713	3.69004
272	854.51	58106.9	73984	20123648	16.4924	6.4792	3.67647
273	857.66	58534.9	74529	20346417	16.5227	6.4872	3.66300
274	860.80	58964.6	75076	20570824	16.5529	6.4951	3.64964
275	**863.94**	**59395.7**	**75625**	**20796875**	**16.5831**	**6.5030**	**3.63636**
276	867.08	59828.5	76176	21024576	16.6132	6.5108	3.62319
277	870.22	60262.8	76729	21253933	16.6433	6.5187	3.61011
278	873.36	60698.7	77284	21484952	16.6733	6.5265	3.59712
279	876.50	61136.2	77841	21717639	16.7033	6.5343	3.58423
280	**879.65**	**61575.2**	**78400**	**21952000**	**16.7332**	**6.5421**	**3.57143**
281	882.79	62015.8	78961	22188041	16.7631	6.5499	3.55872
282	885.93	62458.0	79524	22425768	16.7929	6.5577	3.54610
283	889.07	62901.8	80089	22665187	16.8226	6.5654	3.53357
284	892.21	63347.1	80656	22906304	16.8523	6.5731	3.52113
285	**895.35**	**63794.0**	**81225**	**23149125**	**16.8819**	**6.5808**	**3.50877**
286	898.50	64242.4	81796	23393656	16.9115	6.5885	3.49650
287	901.64	64692.5	82369	23639903	16.9411	6.5962	3.48432
288	904.78	65144.1	82944	23887872	16.9706	6.6039	3.47222
289	907.92	65597.2	83521	24137569	17.0000	6.6115	3.46021
290	**911.06**	**66052.0**	**84100**	**24389000**	**17.0294**	**6.6191**	**3.44828**
291	914.20	66508.3	84681	24642171	17.0587	6.6267	3.43643
292	917.35	66966.2	85264	24897088	17.0880	6.6343	3.42466
293	920.49	67425.6	85849	25153757	17.1172	6.6419	3.41297
294	923.63	67886.7	86436	25412184	17.1464	6.6494	3.40136
295	**926.77**	**68349.3**	**87025**	**25672375**	**17.1756**	**6.6569**	**3.38983**
296	929.91	68813.5	87616	25934336	17.2047	6.6644	3.37838
297	933.05	69279.2	88209	26198073	17.2337	6.6719	3.36700
298	936.19	69746.5	88804	26463592	17.2627	6.6794	3.35570
299	939.34	70215.4	89401	26730899	17.2916	6.6869	3.34448

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
	Circum.	Area.					
300	**942.48**	**70685.8**	**90000**	**27000000**	**17.3205**	**6.6943**	**3.33333**
301	945.62	71157.9	90601	27270901	17.3494	6.7018	3.32226
302	948.76	71631.5	91204	27543608	17.3781	6.7092	3.31126
303	951.90	72106.6	91809	27818127	17.4069	6.7166	3.30033
304	955.04	72583.4	92416	28094464	17.4356	6.7240	3.28947
305	**958.19**	**73061.7**	**93025**	**28372625**	**17.4642**	**6.7313**	**3.27869**
306	961.33	73541.5	93636	28652616	17.4929	6.7387	3.26797
307	964.47	74023.0	94249	28934443	17.5214	6.7460	3.25733
308	967.61	74506.0	94864	29218112	17.5499	6.7533	3.24675
309	970.75	74990.6	95481	29503629	17.5784	6.7606	3.23625
310	**973.89**	**75476.8**	**96100**	**29791000**	**17.6068**	**6.7679**	**3.22581**
311	977.04	75964.5	96721	30080231	17.6352	6.7752	3.21543
312	980.18	76453.8	97344	30371328	17.6635	6.7824	3.20513
313	983.32	76944.7	97969	30664297	17.6918	6.7897	3.19489
314	986.46	77437.1	98596	30959144	17.7200	6.7969	3.18471
315	**989.60**	**77931.1**	**99225**	**31255875**	**17.7482**	**6.8041**	**3.17460**
316	992.74	78426.7	99856	31554496	17.7764	6.8113	3.16456
317	995.88	78923.9	100489	31855013	17.8045	6.8185	3.15457
318	999.03	79422.6	101124	32157432	17.8326	6.8256	3.14465
319	1002.2	79922.9	101761	32461759	17.8606	6.8328	3.13480
320	**1005.3**	**80424.8**	**102400**	**32768000**	**17.8885**	**6.8399**	**3.12500**
321	1008.5	80928.2	103041	33076161	17.9165	6.8470	3.11527
322	1011.6	81433.2	103684	33386248	17.9444	6.8541	3.10559
323	1014.7	81939.8	104329	33698267	17.9722	6.8612	3.09598
324	1017.9	82448.0	104976	34012224	18.0000	6.8683	3.08642
325	**1021.0**	**82957.7**	**105625**	**34328125**	**18.0278**	**6.8753**	**3.07692**
326	1024.2	83469.0	106276	34645976	18.0555	6.8824	3.06749
327	1027.3	83981.8	106929	34965783	18.0831	6.8894	3.05810
328	1030.4	84496.3	107584	35287552	18.1108	6.8964	3.04878
329	1033.6	85012.3	108241	35611289	18.1384	6.9034	3.03951
330	**1036.7**	**85529.9**	**108900**	**35937000**	**18.1659**	**6.9104**	**3.03030**
331	1039.9	86049.0	109561	36264691	18.1934	6.9174	3.02115
332	1043.0	86569.7	110224	36594368	18.2209	6.9244	3.01205
333	1046.2	87092.0	110889	36926037	18.2483	6.9313	3.00300
334	1049.3	87615.9	111556	37259704	18.2757	6.9382	2.99401
335	**1052.4**	**88141.3**	**112225**	**37595375**	**18.3030**	**6.9451**	**2.98507**
336	1055.6	88668.3	112896	37933056	18.3303	6.9521	2.97619
337	1058.7	89196.9	113569	38272753	18.3576	6.9589	2.96736
338	1061.9	89727.0	114244	38614472	18.3848	6.9658	2.95858
339	1065.0	90258.7	114921	38958219	18.4120	6.9727	2.94985
340	**1068.1**	**90792.0**	**115600**	**39304000**	**18.4391**	**6.9795**	**2.94118**
341	1071.3	91326.9	116281	39651821	18.4662	6.9864	2.93255
342	1074.4	91863.3	116964	40001688	18.4932	6.9932	2.92398
343	1077.6	92401.3	117649	40353607	18.5203	7.0000	2.91545
344	1080.7	92940.9	118336	40707584	18.5472	7.0068	2.90698
345	**1083.8**	**93482.0**	**119025**	**41063625**	**18.5742**	**7.0136**	**2.89855**
346	1087.0	94024.7	119716	41421736	18.6011	7.0203	2.89017
347	1090.1	94569.0	120409	41781923	18.6279	7.0271	2.88184
348	1093.3	95114.9	121104	42144192	18.6548	7.0338	2.87356
349	1096.4	95662.3	121801	42508549	18.6815	7.0406	2.86533

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350	**1099.6**	**96211.3**	**122500**	**42875000**	**18.7083**	**7.0473**	**2.85714**
351	1102.7	96761.8	123201	43243551	18.7350	7.0540	2.84900
352	1105.8	97314.0	123904	43614208	18.7617	7.0607	2.84091
353	1109.0	97867.7	124609	43986977	18.7883	7.0674	2.83286
354	1112.1	98423.0	125316	44361864	18.8149	7.0740	2.82486
355	**1115.3**	**98979.8**	**126025**	**44738875**	**18.8414**	**7.0807**	**2.81690**
356	1118.4	99538.2	126736	45118016	18.8680	7.0873	2.80899
357	1121.5	100098	127449	45499293	18.8944	7.0940	2.80112
358	1124.7	100660	128164	45882712	18.9209	7.1006	2.79330
359	1127.8	101223	128881	46268279	18.9473	7.1072	2.78552
360	**1131.0**	**101788**	**129600**	**46656000**	**18.9737**	**7.1138**	**2.77778**
361	1134.1	102354	130321	47045881	19.0000	7.1204	2.77008
362	1137.3	102922	131044	47437928	19.0263	7.1269	2.76243
363	1140.4	103491	131769	47832147	19.0526	7.1335	2.75482
364	1143.5	104062	132496	48228544	19.0788	7.1400	2.74725
365	**1146.7**	**104635**	**133225**	**48627125**	**19.1050**	**7.1466**	**2.73973**
366	1149.8	105209	133956	49027896	19.1311	7.1531	2.73224
367	1153.0	105785	134689	49430863	19.1572	7.1596	2.72480
368	1156.1	106362	135424	49836032	19.1833	7.1661	2.71739
369	1159.2	106941	136161	50243409	19.2094	7.1726	2.71003
370	**1162.4**	**107521**	**136900**	**50653000**	**19.2354**	**7.1791**	**2.70270**
371	1165.5	108103	137641	51064811	19.2614	7.1855	2.69542
372	1168.7	108687	138384	51478848	19.2873	7.1920	2.68817
373	1171.8	109272	139129	51895117	19.3132	7.1984	2.68097
374	1175.0	109858	139876	52313624	19.3391	7.2048	2.67380
375	**1178.1**	**110447**	**140625**	**52734375**	**19.3649**	**7.2112**	**2.66667**
376	1181.2	111036	141376	53157376	19.3907	7.2177	2.65957
377	1184.4	111628	142129	53582633	19.4165	7.2240	2.65252
378	1187.5	112221	142884	54010152	19.4422	7.2304	2.64550
379	1190.7	112815	143641	54439939	19.4679	7.2368	2.63852
380	**1193.8**	**113411**	**144400**	**54872000**	**19.4936**	**7.2432**	**2.63158**
381	1196.9	114009	145161	55306341	19.5192	7.2495	2.62467
382	1200.1	114608	145924	55742968	19.5448	7.2558	2.61780
383	1203.2	115209	146689	56181887	19.5704	7.2622	2.61097
384	1206.4	115812	147456	56623104	19.5959	7.2685	2.60417
385	**1209.5**	**116416**	**148225**	**57066625**	**19.6214**	**7.2748**	**2.59740**
386	1212.7	117021	148996	57512456	19.6469	7.2811	2.59067
387	1215.8	117628	149769	57960603	19.6723	7.2874	2.58398
388	1218.9	118237	150544	58411072	19.6977	7.2936	2.57732
389	1222.1	118847	151321	58863869	19.7231	7.2999	2.57069
390	**1225.2**	**119459**	**152100**	**59319000**	**19.7484**	**7.3061**	**2.56410**
391	1228.4	120072	152881	59776471	19.7737	7.3124	2.55755
392	1231.5	120687	153664	60236288	19.7990	7.3186	2.55102
393	1234.6	121304	154449	60698457	19.8242	7.3248	2.54453
394	1237.8	121922	155236	61162984	19.8494	7.3310	2.53807
395	**1240.9**	**122542**	**156025**	**61629875**	**19.8746**	**7.3372**	**2.53165**
396	1244.1	123163	156816	62099136	19.8997	7.3434	2.52525
397	1247.2	123786	157609	62570773	19.9249	7.3496	2.51889
398	1250.4	124410	158404	63044792	19.9499	7.3558	2.51256
399	1253.5	125036	159201	63521199	19.9750	7.3619	2.50627

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400	**1256.6**	**125664**	**160000**	**64000000**	**20.0000**	**7.3681**	**2.50000**
401	1259.8	126293	160801	64481201	20.0250	7.3742	2.49377
402	1262.9	126923	161604	64964808	20.0499	7.3803	2.48756
403	1266.1	127556	162409	65450827	20.0749	7.3864	2.48139
404	1269.2	128190	163216	65939264	20.0998	7.3925	2.47525
405	**1272.3**	**128825**	**164025**	**66430125**	**20.1246**	**7.3986**	**2.46914**
406	1275.5	129462	164836	66923416	20.1494	7.4047	2.46305
407	1278.6	130100	165649	67419143	20.1742	7.4108	2.45700
408	1281.8	130741	166464	67917312	20.1990	7.4169	2.45098
409	1284.9	131382	167281	68417929	20.2237	7.4229	2.44499
410	**1288.1**	**132025**	**168100**	**68921000**	**20.2485**	**7.4290**	**2.43902**
411	1291.2	132670	168921	69426531	20.2731	7.4350	2.43309
412	1294.3	133317	169744	69934528	20.2978	7.4410	2.42718
413	1297.5	133965	170569	70444997	20.3224	7.4470	2.42131
414	1300.6	134614	171396	70957944	20.3470	7.4530	2.41546
415	**1303.8**	**135265**	**172225**	**71473375**	**20.3715**	**7.4590**	**2.40964**
416	1306.9	135918	173056	71991296	20.3961	7.4650	2.40385
417	1310.0	136572	173889	72511713	20.4206	7.4710	2.39808
418	1313.2	137228	174724	73034632	20.4450	7.4770	2.39234
419	1316.3	137885	175561	73560059	20.4695	7.4829	2.38664
420	**1319.5**	**138544**	**176400**	**74088000**	**20.4939**	**7.4889**	**2.38095**
421	1322.6	139205	177241	74618461	20.5183	7.4948	2.37530
422	1325.8	139867	178084	75151448	20.5426	7.5007	2.36967
423	1328.9	140531	178929	75686967	20.5670	7.5067	2.36407
424	1332.0	141196	179776	76225024	20.5913	7.5126	2.35849
425	**1335.2**	**141863**	**180625**	**76765625**	**20.6155**	**7.5185**	**2.35294**
426	1338.3	142531	181476	77308776	20.6398	7.5244	2.34742
427	1341.5	143201	182329	77854483	20.6640	7.5302	2.34192
428	1344.6	143872	183184	78402752	20.6882	7.5361	2.33645
429	1347.7	144545	184041	78953589	20.7123	7.5420	2.33100
430	**1350.9**	**145220**	**184900**	**79507000**	**20.7364**	**7.5478**	**2.32558**
431	1354.0	145896	185761	80062991	20.7605	7.5537	2.32019
432	1357.2	146574	186624	80621568	20.7846	7.5595	2.31482
433	1360.3	147254	187489	81182737	20.8087	7.5654	2.30947
434	1363.5	147934	188356	81746504	20.8327	7.5712	2.30415
435	**1366.6**	**148617**	**189225**	**82312875**	**20.8567**	**7.5770**	**2.29885**
436	1369.7	149301	190096	82881856	20.8806	7.5828	2.29358
437	1372.9	149987	190969	83453453	20.9045	7.5886	2.28833
438	1376.0	150674	191844	84027672	20.9284	7.5944	2.28311
439	1379.2	151363	192721	84604519	20.9523	7.6001	2.27790
440	**1382.3**	**152053**	**193600**	**85184000**	**20.9762**	**7.6059**	**2.27273**
441	1385.4	152745	194481	85766121	21.0000	7.6117	2.26757
442	1388.6	153439	195364	86350888	21.0238	7.6174	2.26244
443	1391.7	154134	196249	86938307	21.0476	7.6232	2.25734
444	1394.9	154830	197136	87528384	21.0713	7.6289	2.25225
445	**1398.0**	**155528**	**198025**	**88121125**	**21.0950**	**7.6346**	**2.24719**
446	1401.2	156228	198916	88716536	21.1187	7.6403	2.24215
447	1404.3	156930	199809	89314623	21.1424	7.6460	2.23714
448	1407.4	157633	200704	89915392	21.1660	7.6517	2.23214
449	1410.6	158337	201601	90518849	21.1896	7.6574	2.22717

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450	**1413.7**	**159043**	**202500**	**91125000**	**21.2132**	**7.6631**	**2.22222**
451	1416.9	159751	203401	91733851	21.2368	7.6688	2.21730
452	1420.0	160460	204304	92345408	21.2603	7.6744	2.21239
453	1423.1	161171	205209	92959677	21.2838	7.6801	2.20751
454	1426.3	161883	206116	93576664	21.3073	7.6857	2.20264
455	**1429.4**	**162597**	**207025**	**94196375**	**21.3307**	**7.6914**	**2.19780**
456	1432.6	163313	207936	94818816	21.3542	7.6970	2.19298
457	1435.7	164030	208849	95443993	21.3776	7.7026	2.18818
458	1438.9	164748	209764	96071912	21.4009	7.7082	2.18341
459	1442.0	165468	210681	96702579	21.4243	7.7138	2.17865
460	**1445.1**	**166190**	**211600**	**97336000**	**21.4476**	**7.7194**	**2.17391**
461	1448.3	166914	212521	97972181	21.4709	7.7250	2.16920
462	1451.4	167639	213444	98611128	21.4942	7.7306	2.16450
463	1454.6	168365	214369	99252847	21.5174	7.7362	2.15983
464	1457.7	169093	215296	99897344	21.5407	7.7418	2.15517
465	**1460.8**	**169823**	**216225**	**100544625**	**21.5639**	**7.7473**	**2.15054**
466	1464.0	170554	217156	101194696	21.5870	7.7529	2.14592
467	1467.1	171287	218089	101847563	21.6102	7.7584	2.14133
468	1470.3	172021	219024	102503232	21.6333	7.7639	2.13675
469	1473.4	172757	219961	103161709	21.6564	7.7695	2.13220
470	**1476.5**	**173494**	**220900**	**103823000**	**21.6795**	**7.7750**	**2.12766**
471	1479.7	174234	221841	104487111	21.7025	7.7805	2.12314
472	1482.8	174974	222784	105154048	21.7256	7.7860	2.11864
473	1486.0	175716	223729	105823817	21.7486	7.7915	2.11417
474	1489.1	176460	224676	106496424	21.7715	7.7970	2.10971
475	**1492.3**	**177205**	**225625**	**107171875**	**21.7945**	**7.8025**	**2.10526**
476	1495.4	177952	226576	107850176	21.8174	7.8079	2.10084
477	1498.5	178701	227529	108531333	21.8403	7.8134	2.09644
478	1501.7	179451	228484	109215352	21.8632	7.8188	2.09205
479	1504.8	180203	229441	109902239	21.8861	7.8243	2.08768
480	**1508.0**	**180956**	**230400**	**110592000**	**21.9089**	**7.8297**	**2.08333**
481	1511.1	181711	231361	111284641	21.9317	7.8352	2.07900
482	1514 3	182467	232324	111980168	21.9545	7.8406	2.07469
483	1517.4	183225	233289	112678587	21.9773	7.8460	2.07039
484	1520.5	183984	234256	113379904	22.0000	7.8514	2.06612
485	**1523.7**	**184745**	**235225**	**114084125**	**22.0227**	**7.8568**	**2.06186**
486	1526.8	185508	236196	114791256	22.0454	7.8622	2.05761
487	1530.0	186272	237169	115501303	22.0681	7.8676	2.05339
488	1533.1	187038	238144	116214272	22.0907	7.8730	2.04918
489	1536.2	187805	239121	116930169	22.1133	7.8784	2.04499
490	**1539.4**	**188574**	**240100**	**117649000**	**22.1359**	**7.8837**	**2.04082**
491	1542.5	189345	241081	118370771	22.1585	7.8891	2.03666
492	1545.7	190117	242064	119095488	22.1811	7.8944	2.03252
493	1548.8	190890	243049	119823157	22.2036	7.8998	2.02840
494	1551.9	191665	244036	120553784	22.2261	7.9051	2.02429
495	**1555.1**	**192442**	**245025**	**121287375**	**22.2486**	**7.9105**	**2.02020**
496	1558.2	193221	246016	122023936	22.2711	7.9158	2.01613
497	1561.4	194000	247009	122763473	22.2935	7.9211	2.01207
498	1564.5	194782	248004	123505992	22.3159	7.9264	2.00803
499	1567.7	195565	249001	124251499	22.3383	7.9317	2.00401

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
	Circum.	Area.					
500	**1570.8**	**196350**	**250000**	**125000000**	**22.3607**	**7.9370**	**2.00000**
501	1573.9	197136	251001	125751501	22.3830	7.9423	1.99601
502	1577.1	197923	252004	126506008	22.4054	7.9476	1.99203
503	1580.2	198713	253009	127263527	22.4277	7.9528	1.98807
504	1583.4	199504	254016	128024064	22.4499	7.9581	1.98413
505	**1586.5**	**200296**	**255025**	**128787625**	**22.4722**	**7.9634**	**1.98020**
506	1589.7	201090	256036	129554216	22.4944	7.9686	1.97629
507	1592.8	201886	257049	130323843	22.5167	7.9739	1.97239
508	1595.9	202683	258064	131096512	22.5389	7.9791	1.96850
509	1599.1	203482	259081	131872229	22.5610	7.9843	1.96464
510	**1602.2**	**204282**	**260100**	**132651000**	**22.5832**	**7.9896**	**1.96078**
511	1605.4	205084	261121	133432831	22.6053	7.9948	1.95695
512	1608.5	205887	262144	134217728	22.6274	8.0000	1.95312
513	1611.6	206692	263169	135005697	22.6495	8.0052	1.94932
514	1614.8	207499	264196	135796744	22.6716	8.0104	1.94553
515	**1617.9**	**208307**	**265225**	**136590875**	**22.6936**	**8.0156**	**1.94175**
516	1621.1	209117	266256	137388096	22.7156	8.0208	1.93798
517	1624.2	209928	267289	138188413	22.7376	8.0260	1.93424
518	1627.3	210741	268324	138991832	22.7596	8.0311	1.93050
519	1630.5	211556	269361	139798359	22.7816	8.0363	1.92678
520	**1633.6**	**212372**	**270400**	**140608000**	**22.8035**	**8.0415**	**1.92308**
521	1636.8	213189	271441	141420761	22.8254	8.0466	1.91939
522	1639.9	214008	272484	142236648	22.8473	8.0517	1.91571
523	1643.1	214829	273529	143055667	22.8692	8.0569	1.91205
524	1646.2	215651	274576	143877824	22.8910	8.0620	1.90840
525	**1649.3**	**216475**	**275625**	**144703125**	**22.9129**	**8.0671**	**1.90476**
526	1652.5	217301	276676	145531576	22.9347	8.0723	1.90114
527	1655.6	218128	277729	146363183	22.9565	8.0774	1.89753
528	1658.8	218956	278784	147197952	22.9783	8.0825	1.89394
529	1661.9	219787	279841	148035889	23.0000	8.0876	1.89036
530	**1665.0**	**220618**	**280900**	**148877000**	**23.0217**	**8.0927**	**1.88679**
531	1668.2	221452	281961	149721291	23.0434	8.0978	1.88324
532	1671.3	222287	283024	150568768	23.0651	8.1028	1.87970
533	1674.5	223123	284089	151419437	23.0868	8.1079	1.87617
534	1677.6	223961	285156	152273304	23.1084	8.1130	1.87266
535	**1680.8**	**224801**	**286225**	**153130375**	**23.1301**	**8.1180**	**1.86916**
536	1683.9	225642	287296	153990656	23.1517	8.1231	1.86567
537	1687.0	226484	288369	154854153	23.1733	8.1281	1.86220
538	1690.2	227329	289444	155720872	23.1948	8.1332	1.85874
539	1693.3	228175	290521	156590819	23.2164	8.1382	1.85529
540	**1696.5**	**229022**	**291600**	**157464000**	**23.2379**	**8.1433**	**1.85185**
541	1699.6	229871	292681	158340421	23.2594	8.1483	1.84843
542	1702.7	230722	293764	159220088	23.2809	8.1533	1.84502
543	1705.9	231574	294849	160103007	23.3024	8.1583	1.84162
544	1709.0	232428	295936	160989184	23.3238	8.1633	1.83824
545	**1712.2**	**233283**	**297025**	**161878625**	**23.3452**	**8.1683**	**1.83486**
546	1715.3	234140	298116	162771336	23.3666	8.1733	1.83150
547	1718.5	234998	299209	163667323	23.3880	8.1783	1.82815
548	1721.6	235858	300304	164566592	23.4094	8.1833	1.82482
549	1724.7	236720	301401	165469149	23.4307	8.1882	1.82149

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550	**1727.9**	**237583**	**302500**	**166375000**	**23.4521**	**8.1932**	**1.81818**
551	1731.0	238448	303601	167284151	23.4734	8.1982	1.81488
552	1734.2	239314	304704	168196608	23.4947	8.2031	1.81159
553	1737.3	240182	305809	169112377	23.5160	8.2081	1.80832
554	1740.4	241051	306916	170031464	23.5372	8.2130	1.80505
555	**1743.6**	**241922**	**308025**	**170953875**	**23.5584**	**8.2180**	**1.80180**
556	1746.7	242795	309136	171879616	23.5797	8.2229	1.79856
557	1749.9	243669	310249	172808693	23.6008	8.2278	1.79533
558	1753.0	244545	311364	173741112	23.6220	8.2327	1.79211
559	1756.2	245422	312481	174676879	23.6432	8.2377	1.78891
560	**1759.3**	**246301**	**313600**	**175616000**	**23.6643**	**8.2426**	**1.78571**
561	1762.4	247181	314721	176558481	23.6854	8.2475	1.78253
562	1765.6	248063	315844	177504328	23.7065	8.2524	1.77936
563	1768.7	248947	316969	178453547	23.7276	8.2573	1.77620
564	1771.9	249832	318096	179406144	23.7487	8.2621	1.77305
565	**1775.0**	**250719**	**319225**	**180362125**	**23.7697**	**8.2670**	**1.76991**
566	1778.1	251607	320356	181321496	23.7908	8.2719	1.76678
567	1781.3	252497	321489	182284263	23.8118	8.2768	1.76367
568	1784.4	253388	322624	183250432	23.8328	8.2816	1.76056
569	1787.6	254281	323761	184220009	23.8537	8.2865	1.75747
570	**1790.7**	**255176**	**324900**	**185193000**	**23.8747**	**8.2913**	**1.75439**
571	1793.9	256072	326041	186169411	23.8956	8.2962	1.75131
572	1797.0	256970	327184	187149248	23.9165	8.3010	1.74825
573	1800.1	257869	328329	188132517	23.9374	8.3059	1.74520
574	1803.3	258770	329476	189119224	23.9583	8.3107	1.74216
575	**1806.4**	**259672**	**330625**	**190109375**	**23.9792**	**8.3155**	**1.73913**
576	1809.6	260576	331776	191102976	24.0000	8.3203	1.73611
577	1812.7	261482	332929	192100033	24.0208	8.3251	1.73310
578	1815.8	262389	334084	193100552	24.0416	8.3300	1.73010
579	1819.0	263298	335241	194104539	24.0624	8.3348	1.72712
580	**1822.1**	**264208**	**336400**	**195112000**	**24.0832**	**8.3396**	**1.72414**
581	1825.3	265120	337561	196122941	24.1039	8.3443	1.72117
582	1828.4	266033	338724	197137368	24.1247	8.3491	1.71821
583	1831.6	266948	339889	198155287	24.1454	8.3539	1.71527
584	1834.7	267865	341056	199176704	24.1661	8.3587	1.71233
585	**1837.8**	**268783**	**342225**	**200201625**	**24.1868**	**8.3634**	**1.70940**
586	1841.0	269701	343396	201230056	24.2074	8.3682	1.70649
587	1844.1	270624	344569	202262003	24.2281	8.3730	1.70358
588	1847.3	271547	345744	203297472	24.2487	8.3777	1.70068
589	1850.4	272471	346921	204336469	24.2693	8.3825	1.69779
590	**1853.5**	**273397**	**348100**	**205379000**	**24.2899**	**8.3872**	**1.69492**
591	1856.7	274325	349281	206425071	24.3105	8.3919	1.69205
592	1859.8	275254	350464	207474688	24.3311	8.3967	1.68919
593	1863.0	276184	351649	208527857	24.3516	8.4014	1.68634
594	1866.1	277117	352836	209584584	24.3721	8.4061	1.68350
595	**1869.3**	**278051**	**354025**	**210644875**	**24.3926**	**8.4108**	**1.68067**
596	1872.4	278986	355216	211708736	24.4131	8.4155	1.67785
597	1875.5	279923	356409	212776173	24.4336	8.4202	1.67504
598	1878.7	280862	357604	213847192	24.4540	8.4249	1.67224
599	1881.8	281802	358801	214921799	24.4745	8.4296	1.66945

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600	**1885.0**	**282743**	**360000**	**216000000**	**24.4949**	**8.4343**	**1.66667**
601	1888.1	283687	361201	217081801	24.5153	8.4390	1.66389
602	1891.2	284631	362404	218167208	24.5357	8.4437	1.66113
603	1894.4	285578	363609	219256227	24.5561	8.4484	1.65837
604	1897.5	286526	364816	220348864	24.5764	8.4530	1.65563
605	**1900.7**	**287475**	**366025**	**221445125**	**24.5967**	**8.4577**	**1.65289**
606	1903.8	288426	367236	222545016	24.6171	8.4623	1.65017
607	1907.0	289379	368449	223648543	24.6374	8.4670	1.64745
608	1910.1	290333	369664	224755712	24.6577	8.4716	1.64474
609	1913.2	291289	370881	225866529	24.6779	8.4763	1.64204
610	**1916.4**	**292247**	**372100**	**226981000**	**24.6982**	**8.4809**	**1.63934**
611	1919.5	293206	373321	228099131	24.7184	8.4856	1.63666
612	1922.7	294166	374544	229220928	24.7386	8.4902	1.63399
613	1925.8	295128	375769	230346397	24.7588	8.4948	1.63132
614	1928.9	296092	376996	231475544	24.7790	8.4994	1.62866
615	**1932.1**	**297057**	**378225**	**232608375**	**24.7992**	**8.5040**	**1.62602**
616	1935.2	298024	379456	233744896	24.8193	8.5086	1.62338
617	1938.4	298992	380689	234885113	24.8395	8.5132	1.62075
618	1941.5	299962	381924	236029032	24.8596	8.5178	1.61812
619	1944.7	300934	383161	237176659	24.8797	8.5224	1.61551
620	**1947.8**	**301907**	**384400**	**238328000**	**24.8998**	**8.5270**	**1.61290**
621	1950.9	302882	385641	239483061	24.9199	8.5316	1.61031
622	1954.1	303858	386884	240641848	24.9399	8.5362	1.60772
623	1957.2	304836	388129	241804367	24.9600	8.5408	1.60514
624	1960.4	305815	389376	242970624	24.9800	8.5453	1.60256
625	**1963.5**	**306796**	**390625**	**244140625**	**25.0000**	**8.5499**	**1.60000**
626	1966.6	307779	391876	245314376	25.0200	8.5544	1.59744
627	1969.8	308763	393129	246491883	25.0400	8.5590	1.59490
628	1972.9	309748	394384	247673152	25.0599	8.5635	1.59236
629	1976.1	310736	395641	248858189	25.0799	8.5681	1.58983
630	**1979.2**	**311725**	**396900**	**250047000**	**25.0998**	**8.5726**	**1.58730**
631	1982.4	312715	398161	251239591	25.1197	8.5772	1.58479
632	1985.5	313707	399424	252435968	25.1396	8.5817	1.58228
633	1988.6	314700	400689	253636137	25.1595	8.5862	1.57978
634	1991.8	315696	401956	254840104	25.1794	8.5907	1.57729
635	**1994.9**	**316692**	**403225**	**256047875**	**25.1992**	**8.5952**	**1.57480**
636	1998.1	317690	404496	257259456	25.2190	8.5997	1.57233
637	2001.2	318690	405769	258474853	25.2389	8.6043	1.56986
638	2004.3	319692	407044	259694072	25.2587	8.6088	1.56740
639	2007.5	320695	408321	260917119	25.2784	8.6132	1.56495
640	**2010.6**	**321699**	**409600**	**262144000**	**25.2982**	**8.6177**	**1.56250**
641	2013.8	322705	410881	263374721	25.3180	8.6222	1.56006
642	2016.9	323713	412164	264609288	25.3377	8.6267	1.55763
643	2020.0	324722	413449	265847707	25.3574	8.6312	1.55521
644	2023.2	325733	414736	267089984	25.3772	8.6357	1.55280
645	**2026.3**	**326745**	**416025**	**268336125**	**25.3969**	**8.6401**	**1.55039**
646	2029.5	327759	417316	269586136	25.4165	8.6446	1.54799
647	2032.6	328775	418609	270840023	25.4362	8.6490	1.54560
648	2035.8	329792	419904	272097792	25.4558	8.6535	1.54321
649	2038.9	330810	421201	273359449	25.4755	8.6579	1.54083

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650	**2042.0**	**331831**	**422500**	**274625000**	**25.4951**	**8.6624**	**1.53846**
651	2045.2	332853	423801	275894451	25.5147	8.6668	1.53610
652	2048.3	333876	425104	277167808	25.5343	8.6713	1.53374
653	2051.5	334901	426409	278445077	25.5539	8.6757	1.53139
654	2054.6	335927	427716	279726264	25.5734	8.6801	1.52905
655	**2057.7**	**336955**	**429025**	**281011375**	**25.5930**	**8.6845**	**1.52672**
656	2060.9	337985	430336	282300416	25.6125	8.6890	1.52439
657	2064.0	339016	431649	283593393	25.6320	8.6934	1.52207
658	2067.2	340049	432964	284890312	25.6515	8.6978	1.51976
659	2070.3	341084	434281	286191179	25.6710	8.7022	1.51745
660	**2073.5**	**342119**	**435600**	**287496000**	**25.6905**	**8.7066**	**1.51515**
661	2076.6	343157	436921	288804781	25.7099	8.7110	1.51286
662	2079.7	344196	438244	290117528	25.7294	8.7154	1.51057
663	2082.9	345237	439569	291434247	25.7488	8.7198	1.50830
664	2086.0	346279	440896	292754944	25.7682	8.7241	1.50602
665	**2089.2**	**347323**	**442225**	**294079625**	**25.7876**	**8.7285**	**1.50376**
666	2092.3	348368	443556	295408296	25.8070	8.7329	1.50150
667	2095.4	349415	444889	296740963	25.8263	8.7373	1.49925
668	2098.6	350464	446224	298077632	25.8457	8.7416	1.49701
669	2101.7	351514	447561	299418309	25.8650	8.7460	1.49477
670	**2104.9**	**352565**	**448900**	**300763000**	**25.8844**	**8.7503**	**1.49254**
671	2108.0	353618	450241	302111711	25.9037	8.7547	1.49031
672	2111.2	354673	451584	303464448	25.9230	8.7590	1.48810
673	2114.3	355730	452929	304821217	25.9422	8.7634	1.48588
674	2117.4	356788	454276	306182024	25.9615	8.7677	1.48368
675	**2120.6**	**357847**	**455625**	**307546875**	**25.9808**	**8.7721**	**1.48148**
676	2123.7	358908	456976	308915776	26.0000	8.7764	1.47929
677	2126.9	359971	458329	310288733	26.0192	8.7807	1.47711
678	2130.0	361035	459684	311665752	26.0384	8.7850	1.47493
679	2133.1	362101	461041	313046839	26.0576	8.7893	1.47275
680	**2136.3**	**363168**	**462400**	**314432000**	**26.0768**	**8.7937**	**1.47059**
681	2139.4	364237	463761	315821241	26.0960	8.7980	1.46843
682	2142.6	365308	465124	317214568	26.1151	8.8023	1.46628
683	2145.7	366380	466489	318611987	26.1343	8.8066	1.46413
684	2148.9	367453	467856	320013504	26.1534	8.8109	1.46199
685	**2152.0**	**368528**	**469225**	**321419125**	**26.1725**	**8.8152**	**1.45985**
686	2155.1	369605	470596	322828856	26.1916	8.8194	1.45773
687	2158.3	370684	471969	324242703	26.2107	8.8237	1.45560
688	2161.4	371764	473344	325660672	26.2298	8.8280	1.45349
689	2164.6	372845	474721	327082769	26.2488	8.8323	1.45138
690	**2167.7**	**373928**	**476100**	**328509000**	**26.2679**	**8.8366**	**1.44928**
691	2170.8	375013	477481	329939371	26.2869	8.8408	1.44718
692	2174.0	376099	478864	331373888	26.3059	8.8451	1.44509
693	2177.1	377187	480249	332812557	26.3249	8.8493	1.44300
694	2180.3	378276	481636	334255384	26.3439	8.8536	1.44092
695	**2183.4**	**379367**	**483025**	**335702375**	**26.3629**	**8.8578**	**1.43885**
696	2186.6	380459	484416	337153536	26.3818	8.8621	1.43678
697	2189.7	381554	485809	338608873	26.4008	8.8663	1.43472
698	2192.8	382649	487204	340068392	26.4197	8.8706	1.43267
699	2196.0	383746	488601	341532099	26.4386	8.8748	1.43062

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
	Circum.	Area.					
700	**2199.1**	**384845**	**490000**	**343000000**	**26.4575**	**8.8790**	**1.42857**
701	2202.3	385945	491401	344472101	26.4764	8.8833	1.42653
702	2205.4	387047	492804	345948408	26.4953	8.8875	1.42450
703	2208.5	388151	494209	347428927	26.5141	8.8917	1.42248
704	2211.7	389256	495616	348913664	26.5330	8.8959	1.42046
705	**2214.8**	**390363**	**497025**	**350402625**	**26.5518**	**8.9001**	**1.41844**
706	2218.0	391471	498436	351895816	26.5707	8.9043	1.41643
707	2221.1	392580	499849	353393243	26.5895	8.9085	1.41443
708	2224.3	393692	501264	354894912	26.6083	8.9127	1.41243
709	2227.4	394805	502681	356400829	26.6271	8.9169	1.41044
710	**2230.5**	**395919**	**504100**	**357911000**	**26.6458**	**8.9211**	**1.40845**
711	2233.7	397035	505521	359425431	26.6646	8.9253	1.40647
712	2236.8	398153	506944	360944128	26.6833	8.9295	1.40449
713	2240.0	399272	508369	362467097	26.7021	8.9337	1.40253
714	2243.1	400393	509796	363994344	26.7208	8.9378	1.40056
715	**2246.2**	**401515**	**511225**	**365525875**	**26.7395**	**8.9420**	**1.39860**
716	2249.4	402639	512656	367061696	26.7582	8.9462	1.39665
717	2252.5	403765	514089	368601813	26.7769	8.9503	1.39470
718	2255.7	404892	515524	370146232	26.7955	8.9545	1.39276
719	2258.8	406020	516961	371694959	26.8142	8.9587	1.39082
720	**2261.9**	**407150**	**518400**	**373248000**	**26.8328**	**8.9628**	**1.38889**
721	2265.1	408282	519841	374805361	26.8514	8.9670	1.38696
722	2268.2	409416	521284	376367048	26.8701	8.9711	1.38504
723	2271.4	410550	522729	377933067	26.8887	8.9752	1.38313
724	2274.5	411687	524176	379503424	26.9072	8.9794	1.38122
725	**2277.7**	**412825**	**525625**	**381078125**	**26.9258**	**8.9835**	**1.37931**
726	2280.8	413965	527076	382657176	26.9444	8.9876	1.37741
727	2283.9	415106	528529	384240583	26.9629	8.9918	1.37552
728	2287.1	416248	529984	385828352	26.9815	8.9959	1.37363
729	2290.2	417393	531441	387420489	27.0000	9.0000	1.37174
730	**2293.4**	**418539**	**532900**	**389017000**	**27.0185**	**9.0041**	**1.36986**
731	2296.5	419686	534361	390617891	27.0370	9.0082	1.36799
732	2299.7	420835	535824	392223168	27.0555	9.0123	1.36612
733	2302.8	421986	537289	393832837	27.0740	9.0164	1.36426
734	2305.9	423138	538756	395446904	27.0924	9.0205	1.36240
735	**2309.1**	**424293**	**540225**	**397065375**	**27.1109**	**9.0246**	**1.36054**
736	2312.2	425448	541696	398688256	27.1293	9.0287	1.35870
737	2315.4	426604	543169	400315553	27.1477	9.0328	1.35685
738	2318.5	427762	544644	401947272	27.1662	9.0369	1.35501
739	2321.6	428922	546121	403583419	27.1846	9.0410	1.35318
740	**2324.8**	**430084**	**547600**	**405224000**	**27.2029**	**9.0450**	**1.35135**
741	2327.9	431247	549081	406869021	27.2213	9.0491	1.34953
742	2331.1	432412	550564	408518488	27.2397	9.0532	1.34771
743	2334.2	433578	552049	410172407	27.2580	9.0572	1.34590
744	2337.3	434746	553536	411830784	27.2764	9.0613	1.34409
745	**2340.5**	**435916**	**555025**	**413493625**	**27.2947**	**9.0654**	**1.34228**
746	2343.6	437087	556516	415160936	27.3130	9.0694	1.34048
747	2346.8	438259	558009	416832723	27.3313	9.0735	1.33869
748	2349.9	439433	559504	418508992	27.3496	9.0775	1.33690
749	2353.1	440609	561001	420189749	27.3679	9.0816	1.33511

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
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750	**2356.2**	**441786**	**562500**	**421875000**	**27.3861**	**9.0856**	**1.33333**
751	2359.3	442965	564001	423564751	27.4044	9.0896	1.33156
752	2362.5	444146	565504	425259008	27.4226	9.0937	1.32979
753	2365.6	445328	567009	426957777	27.4408	9.0977	1.32802
754	2368.8	446511	568516	428661064	27.4591	9.1017	1.32626
755	**2371.9**	**447697**	**570025**	**430368875**	**27.4773**	**9.1057**	**1.32450**
756	2375.0	448883	571536	432081216	27.4955	9.1098	1.32275
757	2378.2	450072	573049	433798093	27.5136	9.1138	1.32100
758	2381.3	451262	574564	435519512	27.5318	9.1178	1.31926
759	2384.5	452453	576081	437245479	27.5500	9.1218	1.31752
760	**2387.6**	**453646**	**577600**	**438976000**	**27.5681**	**9.1258**	**1.31579**
761	2390.8	454841	579121	440711081	27.5862	9.1298	1.31406
762	2393.9	456037	580644	442450728	27.6043	9.1338	1.31234
763	2397.0	457234	582169	444194947	27.6225	9.1378	1.31062
764	2400.2	458434	583696	445943744	27.6405	9.1418	1.30890
765	**2403.3**	**459635**	**585225**	**447697125**	**27.6586**	**9.1458**	**1.30719**
766	2406.5	460837	586756	449455096	27.6767	9.1498	1.30548
767	2409.6	462042	588289	451217663	27.6948	9.1537	1.30378
768	2412.7	463247	589824	452984832	27.7128	9.1577	1.30208
769	2415.9	464454	591361	454756609	27.7308	9.1617	1.30039
770	**2419.0**	**465663**	**592900**	**456533000**	**27.7489**	**9.1657**	**1.29870**
771	2422.2	466873	594441	458314011	27.7669	9.1696	1.29702
772	2425.3	468085	595984	460099648	27.7849	9.1736	1.29534
773	2428.5	469298	597529	461889917	27.8029	9.1775	1.29366
774	2431.6	470513	599076	463684824	27.8209	9.1815	1.29199
775	**2434.7**	**471730**	**600625**	**465484375**	**27.8388**	**9.1855**	**1.29032**
776	2437.9	472948	602176	467288576	27.8568	9.1894	1.28866
777	2441.0	474168	603729	469097433	27.8747	9.1933	1.28700
778	2444.2	475389	605284	470910952	27.8927	9.1973	1.28535
779	2447.3	476612	606841	472729139	27.9106	9.2012	1.28370
780	**2450.4**	**477836**	**608400**	**474552000**	**27.9285**	**9.2052**	**1.28205**
781	2453.6	479062	609961	476379541	27.9464	9.2091	1.28041
782	2456.7	480290	611524	478211768	27.9643	9.2130	1.27877
783	2459.9	481519	613089	480048687	27.9821	9.2170	1.27714
784	2463.0	482750	614656	481890304	28.0000	9.2209	1.27551
785	**2466.2**	**483982**	**616225**	**483736625**	**28.0179**	**9.2248**	**1.27389**
786	2469.3	485216	617796	485587656	28.0357	9.2287	1.27226
787	2472.4	486451	619369	487443403	28.0535	9.2326	1.27065
788	2475.6	487688	620944	489303872	28.0713	9.2365	1.26904
789	2478.7	488927	622521	491169069	28.0891	9.2404	1.26743
790	**2481.9**	**490167**	**624100**	**493039000**	**28.1069**	**9.2443**	**1.26582**
791	2485.0	491409	625681	494913671	28.1247	9.2482	1.26422
792	2488.1	492652	627264	496793088	28.1425	9.2521	1.26263
793	2491.3	493897	628849	498677257	28.1603	9.2560	1.26103
794	2494.4	495143	630436	500566184	28.1780	9.2599	1.25945
795	**2497.6**	**496391**	**632025**	**502459875**	**28.1957**	**9.2638**	**1.25786**
796	2500.7	497641	633616	504358336	28.2135	9.2677	1.25628
797	2503.8	498892	635209	506261573	28.2312	9.2716	1.25471
798	2507.0	500145	636804	508169592	28.2489	9.2754	1.25313
799	2510.1	501399	638401	510082399	28.2666	9.2793	1.25156

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
	Circum.	Area.					
800	**2513.3**	**502655**	**640000**	**512000000**	**28.2843**	**9.2832**	**1.25000**
801	2516.4	503912	641601	513922401	28.3019	9.2870	1.24844
802	2519.6	505171	643204	515849608	28.3196	9.2909	1.24688
803	2522.7	506432	644809	517781627	28.3373	9.2948	1.24533
804	2525.8	507694	646416	519718464	28.3549	9.2986	1.24378
805	**2529.0**	**508958**	**648025**	**521660125**	**28.3725**	**9.3025**	**1.24224**
806	2532.1	510223	649636	523606616	28.3901	9.3063	1.24069
807	2535.3	511490	651249	525557943	28.4077	9.3102	1.23916
808	2538.4	512758	652864	527514112	28.4253	9.3140	1.23762
809	2541.5	514028	654481	529475129	28.4429	9.3179	1.23609
810	**2544.7**	**515300**	**656100**	**531441000**	**28.4605**	**9.3217**	**1.23457**
811	2547.8	516573	657721	533411731	28.4781	9.3255	1.23305
812	2551.0	517848	659344	535387328	28.4956	9.3294	1.23153
813	2554.1	519124	660969	537367797	28.5132	9.3332	1.23001
814	2557.3	520402	662596	539353144	28.5307	9.3370	1.22850
815	**2560.4**	**521681**	**664225**	**541343375**	**28.5482**	**9.3408**	**1.22699**
816	2563.5	522962	665856	543338496	28.5657	9.3447	1.22549
817	2566.7	524245	667489	545338513	28.5832	9.3485	1.22399
818	2569.8	525529	669124	547343432	28.6007	9.3523	1.22249
819	2573.0	526814	670761	549353259	28.6182	9.3561	1.22100
820	**2576.1**	**528102**	**672400**	**551368000**	**28.6356**	**9.3599**	**1.21951**
821	2579.2	529391	674041	553387661	28.6531	9.3637	1.21803
822	2582.4	530681	675684	555412248	28.6705	9.3675	1.21655
823	2585.5	531973	677329	557441767	28.6880	9.3713	1.21507
824	2588.7	533267	678976	559476224	28.7054	9.3751	1.21359
825	**2591.8**	**534562**	**680625**	**561515625**	**28.7228**	**9.3789**	**1.21212**
826	2595.0	535858	682276	563559976	28.7402	9.3827	1.21065
827	2598.1	537157	683929	565609283	28.7576	9.3865	1.20919
828	2601.2	538456	685584	567663552	28.7750	9.3902	1.20773
829	2604.4	539758	687241	569722789	28.7924	9.3940	1.20627
830	**2607.5**	**541061**	**688900**	**571787000**	**28.8097**	**9.3978**	**1.20482**
831	2610.7	542365	690561	573856191	28.8271	9.4016	1.20337
832	2613.8	543671	692224	575930368	28.8444	9.4053	1.20192
833	2616.9	544979	693889	578009537	28.8617	9.4091	1.20048
834	2620.1	546288	695556	580093704	28.8791	9.4129	1.19904
835	**2623.2**	**547599**	**697225**	**582182875**	**28.8964**	**9.4166**	**1.19760**
836	2626.4	548912	698896	584277056	28.9137	9.4204	1.19617
837	2629.5	550226	700569	586376253	28.9310	9.4241	1.19474
838	2632.7	551541	702244	588480472	28.9482	9.4279	1.19332
839	2635.8	552858	703921	590589719	28.9655	9.4316	1.19189
840	**2638.9**	**554177**	**705600**	**592704000**	**28.9828**	**9.4354**	**1.19048**
841	2642.1	555497	707281	594823321	29.0000	9.4391	1.18906
842	2645.2	556819	708964	596947688	29.0172	9.4429	1.18765
843	2648.4	558142	710649	599077107	29.0345	9.4466	1.18624
844	2651.5	559467	712336	601211584	29.0517	9.4503	1.18483
845	**2654.6**	**560794**	**714025**	**603351125**	**29.0689**	**9.4541**	**1.18343**
846	2657.8	562122	715716	605495736	29.0861	9.4578	1.18203
847	2660.9	563452	717409	607645423	29.1033	9.4615	1.18064
848	2664.1	564783	719104	609800192	29.1204	9.4652	1.17925
849	2667.2	566116	720801	611960049	29.1376	9.4690	1.17786

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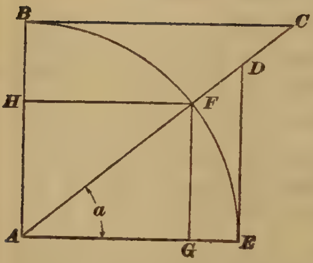
	Circum.	Area.					
850	**2670.4**	**567450**	**722500**	**614125000**	**29.1548**	**9.4727**	**1.17647**
851	2673.5	568786	724201	616295051	29.1719	9.4764	1.17509
852	2676.6	570124	725904	618470208	29.1890	9.4801	1.17371
853	2679.8	571463	727609	620650477	29.2062	9.4838	1.17233
854	2682.9	572803	729316	622835864	29.2233	9.4875	1.17096
855	**2686.1**	**574146**	**731025**	**625026375**	**29.2404**	**9.4912**	**1.16959**
856	2689.2	575490	732736	627222016	29.2575	9.4949	1.16822
857	2692.3	576835	734449	629422793	29.2746	9.4986	1.16686
858	2695.5	578182	736164	631628712	29.2916	9.5023	1.16550
859	2698.6	579530	737881	633839779	29.3087	9.5060	1.16414
860	**2701.8**	**580880**	**739600**	**636056000**	**29.3258**	**9.5097**	**1.16279**
861	2704.9	582232	741321	638277381	29.3428	9.5134	1.16144
862	2708.1	583585	743044	640503928	29.3598	9.5171	1.16009
863	2711.2	584940	744769	642735647	29.3769	9.5207	1.15875
864	2714.3	586297	746496	644972544	29.3939	9.5244	1.15741
865	**2717.5**	**587655**	**748225**	**647214625**	**29.4109**	**9.5281**	**1.15607**
866	2720.6	589014	749956	649461896	29.4279	9.5317	1.15473
867	2723.8	590375	751689	651714363	29.4449	9.5354	1.15340
868	2726.9	591738	753424	653972032	29.4618	9.5391	1.15207
869	2730.0	593102	755161	656234909	29.4788	9.5427	1.15075
870	**2733.2**	**594468**	**756900**	**658503000**	**29.4958**	**9.5464**	**1.14943**
871	2736.3	595835	758641	660776311	29.5127	9.5501	1.14811
872	2739.5	597204	760384	663054848	29.5296	9.5537	1.14679
873	2742.6	598575	762129	665338617	29.5466	9.5574	1.14548
874	2745.8	599947	763876	667627624	29.5635	9.5610	1.14416
875	**2748.9**	**601320**	**765625**	**669921875**	**29.5804**	**9.5647**	**1.14286**
876	2752.0	602696	767376	672221376	29.5973	9.5683	1.14155
877	2755.2	604073	769129	674526133	29.6142	9.5719	1.14025
878	2758.3	605451	770884	676836152	29.6311	9.5756	1.13895
879	2761.5	606831	772641	679151439	29.6479	9.5792	1.13766
880	**2764.6**	**608212**	**774400**	**681472000**	**29.6648**	**9.5828**	**1.13636**
881	2767.7	609595	776161	683797841	29.6816	9.5865	1.13507
882	2770.9	610980	777924	686128968	29.6985	9.5901	1.13379
883	2774.0	612366	779689	688465387	29.7153	9.5937	1.13250
884	2777.2	613754	781456	690807104	29.7321	9.5973	1.13122
885	**2780.3**	**615143**	**783225**	**693154125**	**29.7489**	**9.6010**	**1.12994**
886	2783.5	616534	784996	695506456	29.7658	9.6046	1.12867
887	2786.6	617927	786769	697864103	29.7825	9.6082	1.12740
888	2789.7	619321	788544	700227072	29.7993	9.6118	1.12613
889	2792.9	620717	790321	702595369	29.8161	9.6154	1.12486
890	**2796.0**	**622114**	**792100**	**704969000**	**29.8329**	**9.6190**	**1.12360**
891	2799.2	623513	793881	707347971	29.8496	9.6226	1.12233
892	2802.3	624913	795664	709732288	29.8664	9.6262	1.12108
893	2805.4	626315	797449	712121957	29.8831	9.6298	1.11982
894	2808.6	627718	799236	714516984	29.8998	9.6334	1.11857
895	**2811.7**	**629124**	**801025**	**716917375**	**29.9166**	**9.6370**	**1.11732**
896	2814.9	630530	802816	719323136	29.9333	9.6406	1.11607
897	2818.0	631938	804609	721734273	29.9500	9.6442	1.11483
898	2821.2	633348	806404	724150792	29.9666	9.6477	1.11359
899	2824.3	634760	808201	726572699	29.9833	9.6513	1.11235

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
	Circum.	Area.					
900	**2827.4**	**636173**	**810000**	**729000000**	**30.0000**	**9.6549**	**1.11111**
901	2830.6	637587	811801	731432701	30.0167	9.6585	1.10988
902	2833.7	639003	813604	733870808	30.0333	9.6620	1.10865
903	2836.9	640421	815409	736314327	30.0500	9.6656	1.10742
904	2840.0	641840	817216	738763264	30.0666	9.6692	1.10619
905	**2843.1**	**643261**	**819025**	**741217625**	**30.0832**	**9.6727**	**1.10497**
906	2846.3	644683	820836	743677416	30.0998	9.6763	1.10375
907	2849.4	646107	822649	746142643	30.1164	9.6799	1.10254
908	2852.6	647533	824464	748613312	30.1330	9.6834	1.10132
909	2855.7	648960	826281	751089429	30.1496	9.6870	1.10011
910	**2858.8**	**650388**	**828100**	**753571000**	**30.1662**	**9.6905**	**1.09890**
911	2862.0	651818	829921	756058031	30.1828	9.6941	1.09769
912	2865.1	653250	831744	758550528	30.1993	9.6976	1.09649
913	2868.3	654684	833569	761048497	30.2159	9.7012	1.09529
914	2871.4	656118	835396	763551944	30.2324	9.7047	1.09409
915	**2874.6**	**657555**	**837225**	**766060875**	**30.2490**	**9.7082**	**1.09290**
916	2877.7	658993	839056	768575296	30.2655	9.7118	1.09170
917	2880.8	660433	840889	771095213	30.2820	9.7153	1.09051
918	2884.0	661874	842724	773620632	30.2985	9.7188	1.08932
919	2887.1	663317	844561	776151559	30.3150	9.7224	1.08814
920	**2890.3**	**664761**	**846400**	**778688000**	**30.3315**	**9.7259**	**1.08696**
921	2893.4	666207	848241	781229961	30.3480	9.7294	1.08578
922	2896.5	667654	850084	783777448	30.3645	9.7329	1.08460
923	2899.7	669103	851929	786330467	30.3809	9.7364	1.08342
924	2902.8	670554	853776	788889024	30.3974	9.7400	1.08225
925	**2906.0**	**672006**	**855625**	**791453125**	**30.4138**	**9.7435**	**1.08108**
926	2909.1	673460	857476	794022776	30.4302	9.7470	1.07991
927	2912.3	674915	859329	796597983	30.4467	9.7505	1.07875
928	2915.4	676372	861184	799178752	30.4631	9.7540	1.07759
929	2918.5	677831	863041	801765089	30.4795	9.7575	1.07643
930	**2921.7**	**679291**	**864900**	**804357000**	**30.4959**	**9.7610**	**1.07527**
931	2924.8	680752	866761	806954491	30.5123	9.7645	1.07411
932	2928.0	682216	868624	809557568	30.5287	9.7680	1.07296
933	2931.1	683680	870489	812166237	30.5450	9.7715	1.07181
934	2934.2	685147	872356	814780504	30.5614	9.7750	1.07066
935	**2937.4**	**686615**	**874225**	**817400375**	**30.5778**	**9.7785**	**1.06952**
936	2940.5	688084	876096	820025856	30.5941	9.7819	1.06838
937	2943.7	689555	877969	822656953	30.6105	9.7854	1.06724
938	2946.8	691028	879844	825293672	30.6268	9.7889	1.06610
939	2950.0	692502	881721	827936019	30.6431	9.7924	1.06496
940	**2953.1**	**693978**	**883600**	**830584000**	**30.6594**	**9.7959**	**1.06383**
941	2956.2	695455	885481	833237621	30.6757	9.7993	1.06270
942	2959.4	696934	887364	835896888	30.6920	9.8028	1.06157
943	2962.5	698415	889249	838561807	30.7083	9.8063	1.06045
944	2965.7	699897	891136	841232384	30.7246	9.8097	1.05932
945	**2968.8**	**701380**	**893025**	**843908625**	**30.7409**	**9.8132**	**1.05820**
946	2971.9	702865	894916	846590536	30.7571	9.8167	1.05708
947	2975.1	704352	896809	849278123	30.7734	9.8201	1.05597
948	2978.2	705840	898704	851971392	30.7896	9.8236	1.05485
949	2981.4	707330	900601	854670349	30.8058	9.8270	1.05374

No.	No. = Diam.		Square.	Cube.	Square Root.	Cube Root.	1000 × Reciprocals
	Circum.	Area.					
950	**2984.5**	**708822**	**902500**	**857375000**	**30.8221**	**9.8305**	**1.05263**
951	2987.7	710315	904401	860085351	30.8383	9.8339	1.05152
952	2990.8	711809	906304	862801408	30.8545	9.8374	1.05042
953	2993.9	713306	908209	865523177	30.8707	9.8408	1.04932
954	2997.1	714803	910116	868250664	30.8869	9.8443	1.04822
955	**3000.2**	**716303**	**912025**	**870983875**	**30.9031**	**9.8477**	**1.04712**
956	3003.4	717804	913936	873722816	30.9192	9.8511	1.04603
957	3006.5	719306	915849	876467493	30.9354	9.8546	1.04493
958	3009.6	720810	917764	879217912	30.9516	9.8580	1.04384
959	3012.8	722316	919681	881974079	30.9677	9.8614	1.04275
960	**3015.9**	**723823**	**921600**	**884736000**	**30.9839**	**9.8648**	**1.04167**
961	3019.1	725332	923521	887503681	31.0000	9.8683	1.04058
962	3022.2	726842	925444	890277128	31.0161	9.8717	1.03950
963	3025.4	728354	927369	893056347	31.0322	9.8751	1.03842
964	3028.5	729867	929296	895841344	31.0483	9.8785	1.03734
965	**3031.6**	**731382**	**931225**	**898632125**	**31.0644**	**9.8819**	**1.03627**
966	3034.8	732899	933156	901428696	31.0805	9.8854	1.03520
967	3037.9	734417	935089	904231063	31.0966	9.8888	1.03413
968	3041.1	735937	937024	907039232	31.1127	9.8922	1.03306
969	3044.2	737458	938961	909853209	31.1288	9.8956	1.03199
970	**3047.3**	**738981**	**940900**	**912673000**	**31.1448**	**9.8990**	**1.03093**
971	3050.5	740506	942841	915498611	31.1609	9.9024	1.02987
972	3053.6	742032	944784	918330048	31.1769	9.9058	1.02881
973	3056.8	743559	946729	921167317	31.1929	9.9092	1.02775
974	3059.9	745088	948676	924010424	31.2090	9.9126	1.02669
975	**3063.1**	**746619**	**950625**	**926859375**	**31.2250**	**9.9160**	**1.02564**
976	3066.2	748151	952576	929714176	31.2410	9.9194	1.02459
977	3069.3	749685	954529	932574833	31.2570	9.9227	1.02354
978	3072.5	751221	956484	935441352	31.2730	9.9261	1.02249
979	3075.6	752758	958441	938313739	31.2890	9.9295	1.02145
980	**3078.8**	**754296**	**960400**	**941192000**	**31.3050**	**9.9329**	**1.02041**
981	3081.9	755837	962361	944076141	31.3209	9.9363	1.01937
982	3085.0	757378	964324	946966168	31.3369	9.9396	1.01833
983	3088.2	758922	966289	949862087	31.3528	9.9430	1.01729
984	3091.3	760466	968256	952763904	31.3688	9.9464	1.01626
985	**3094.5**	**762013**	**970225**	**955671625**	**31.3847**	**9.9497**	**1.01523**
986	3097.6	763561	972196	958585256	31.4006	9.9531	1.01420
987	3100.8	765111	974169	961504803	31.4166	9.9565	1.01317
988	3103.9	766662	976144	964430272	31.4325	9.9598	1.01215
989	3107.0	768214	978121	967361669	31.4484	9.9632	1.01112
990	**3110.2**	**769769**	**980100**	**970299000**	**31.4643**	**9.9666**	**1.01010**
991	3113.3	771325	982081	973242271	31.4802	9.9699	1.00908
992	3116.5	772882	984064	976191488	31.4960	9.9733	1.00806
993	3119.6	774441	986049	979146657	31.5119	9.9766	1.00705
994	3122.7	776002	988036	982107784	31.5278	9.9800	1.00604
995	**3125.9**	**777564**	**990025**	**985074875**	**31.5436**	**9.9833**	**1.00503**
996	3129.0	779128	992016	988047936	31.5595	9.9866	1.00402
997	3132.2	780693	994009	991026973	31.5753	9.9900	1.00301
998	3135.3	782260	996004	994011992	31.5911	9.9933	1.00200
999	3138.5	783828	998001	997002999	31.6070	9.9967	1.00100

FORMULAS.



For Radius, $AE=1$

$FG=\sin a$ $AG=\cos a$

$DE=\tan a$ $BC=\cot a$

$AD=\sec a$ $AC=\csc a$

$GE=\text{vers } a$

$BH=\text{covers } a$

$$\sin^2 a + \cos^2 a = 1$$
$$\sec^2 a = 1 + \tan^2 a$$
$$\csc^2 a = 1 + \cot^2 a$$

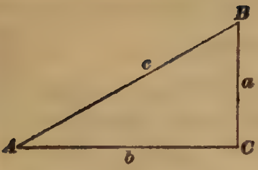
$$\tan a = \frac{\sin a}{\cos a}$$

$$\cot a = \frac{\cos a}{\sin a}$$

$$\text{vers } a = 1 - \cos a$$
$$\text{covers } a = 1 - \sin a$$

sin a		$\sqrt{1-\cos^2 a}$	$\frac{\tan a}{\sqrt{1+\tan^2 a}}$	$\frac{1}{\sqrt{1+\cot^2 a}}$
cos a	$\sqrt{1-\sin^2 a}$		$\frac{1}{\sqrt{1+\tan^2 a}}$	$\frac{\cot a}{\sqrt{1+\cot^2 a}}$
tan a	$\frac{\sin a}{\sqrt{1-\sin^2 a}}$	$\frac{\sqrt{1-\cos^2 a}}{\cos a}$		$\frac{1}{\cot a}$
cot a	$\frac{\sqrt{1-\sin^2 a}}{\sin a}$	$\frac{\cos a}{\sqrt{1-\cos^2 a}}$	$\frac{1}{\tan a}$	

RIGHT TRIANGLE.



$$a^2+b^2=c^2$$

$$\frac{a}{b}=\tan A=\cot B \qquad \frac{b}{a}=\cot A=\tan B$$

$$\frac{a}{c}=\sin A=\cos B \qquad \frac{c}{a}=\csc A=\sec B$$

$$\frac{b}{c}=\cos A=\sin B \qquad \frac{c}{b}=\sec A=\csc B$$

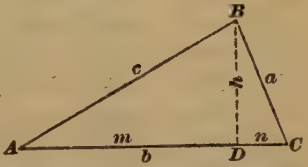
OBLIQUE-ANGLED TRIANGLE.

Notation:

$AB=c \qquad BC=a$

$AC=b \qquad BD=h$

$AD=m \qquad DC=n$



Given	Required	FORMULAS
A, B, a	C, b, c	$A+B+C=180°; \quad b=\dfrac{a \sin B}{\sin A}; \quad c=\dfrac{a \sin C}{\sin A}$
b, c, A	B, C, a	$\begin{cases} \tan \frac{1}{2}(B-C)=\tan \frac{1}{2}(B+C)\times\dfrac{b-c}{b+c}; \\ a^2=b^2+c^2-2bc \cos A; \text{ or } h=c \sin A; \\ m=c \cos A; \; n=b-m; \; a^2=h^2+n^2 \end{cases}$
a, c, A	C, B, b	$\sin C=\sin A\times\dfrac{c}{a}; B=180°-(A+C); \; b=a\times\dfrac{\sin B}{\sin A}$ NOTE—Two values for C, B, and b are possible.
a, b, c	A	$\begin{cases} \sin\dfrac{A}{2}=\sqrt{\dfrac{(s-b)\quad(s-c)}{b\times c}} \\ \cos\dfrac{A}{2}=\sqrt{\dfrac{s\;(s-a)}{b\times c}}; \text{ in which } s=\frac{1}{2}(a+b+c) \\ \tan\dfrac{A}{2}=\sqrt{\dfrac{(s-b)\quad(s-c)}{s\;(s-a)}} \end{cases}$
a, b, c	m, n	$m=\dfrac{c^2+b^2-a^2}{2b}; \quad n=\dfrac{a^2+b^2-c^2}{2b}$

DECIMAL EQUIVALENTS.

Fractions of an Inch.	DECIMALS OF A FOOT.							Fractions of an Inch.
	0″	1″	2″	3″	4″	5″	6″	
0	.0000	.0833	.1667	.2500	.3333	.4167	.5000	0
1/32	.0026	.0859	.1693	.2526	.3359	.4193	.5026	1/32
1/16	.0052	.0885	.1719	.2552	.3385	.4219	.5052	1/16
3/32	.0078	.0911	.1745	.2578	.3411	.4245	.5078	3/32
1/8	.0104	.0938	.1771	.2604	.3438	.4271	.5104	1/8
5/32	.0130	.0964	.1797	.2630	.3464	.4297	.5130	5/32
3/16	.0156	.0990	.1823	.2656	.3490	.4323	.5156	3/16
7/32	.0182	.1016	.1849	.2682	.3516	.4349	.5182	7/32
1/4	.0208	.1042	.1875	.2708	.3542	.4375	.5208	1/4
9/32	.0234	.1068	.1901	.2734	.3568	.4401	.5234	9/32
5/16	.0260	.1094	.1927	.2760	.3594	.4427	.5260	5/16
11/32	.0286	.1120	.1953	.2786	.3620	.4453	.5286	11/32
3/8	.0313	.1146	.1979	.2813	.3646	.4479	.5313	3/8
13/32	.0339	.1172	.2005	.2839	.3672	.4505	.5339	13/32
7/16	.0365	.1198	.2031	.2865	.3698	.4531	.5365	7/16
15/32	.0391	.1224	.2057	.2891	.3724	.4557	.5391	15/32
1/2	.0417	.1250	.2083	.2917	.3750	.4583	.5417	1/2
17/32	.0443	.1276	.2109	.2943	.3776	.4609	.5443	17/32
9/16	.0469	.1302	.2135	.2969	.3802	.4635	.5469	9/16
19/32	.0495	.1328	.2161	.2995	.3828	.4661	.5495	19/32
5/8	.0521	.1354	.2188	.3021	.3854	.4688	.5521	5/8
21/32	.0547	.1380	.2214	.3047	.3880	.4714	.5547	21/32
11/16	.0573	.1406	.2240	.3073	.3906	.4740	.5573	11/16
23/32	.0599	.1432	.2266	.3099	.3932	.4766	.5599	23/32
3/4	.0625	.1458	.2292	.3125	.3958	.4792	.5625	3/4
25/32	.0651	.1484	.2318	.3151	.3984	.4818	.5651	25/32
13/16	.0677	.1510	.2344	.3177	.4010	.4844	.5677	13/16
27/32	.0703	.1536	.2370	.3203	.4036	.4870	.5703	27/32
7/8	.0729	.1563	.2396	.3229	.4063	.4896	.5729	7/8
29/32	.0755	.1589	.2422	.3255	.4089	.4922	.5755	29/32
15/16	.0781	.1615	.2448	.3281	.4115	.4948	.5781	15/16
31/32	.0807	.1641	.2474	.3307	.4141	.4974	.5807	31/32
1	.0833	.1667	.2500	.3333	.4167	.5000	.5833	1

DECIMAL EQUIVALENTS.

Fractions of an Inch.	DECIMALS OF A FOOT.					Fractions of an Inch.	Decimals of an Inch
	7″	8″	9″	10″	11″		
0	.5833	.6667	.7500	.8333	.9167	0	.00000
1/32	.5859	.6693	.7526	.8359	.9193	1/32	.03125
1/16	.5885	.6719	.7552	.8385	.9219	1/16	.06250
3/32	.5911	.6745	.7578	.8411	.9245	3/32	.09375
1/8	.5938	.6771	.7604	.8438	.9271	1/8	.12500
5/32	.5964	.6797	.7630	.8464	.9297	5/32	.15625
3/16	.5990	.6823	.7656	.8490	.9323	3/16	.18750
7/32	.6016	.6849	.7682	.8516	.9349	7/32	.21875
1/4	.6042	.6875	.7708	.8542	.9375	1/4	.25000
9/32	.6068	.6901	.7734	.8568	.9401	9/32	.28125
5/16	.6094	.6927	.7760	.8594	.9427	5/16	.31250
11/32	.6120	.6953	.7786	.8620	.9453	11/32	.34375
3/8	.6146	.6979	.7813	.8646	.9479	3/8	.37500
13/32	.6172	.7005	.7839	.8672	.9505	13/32	.40625
7/16	.6198	.7031	.7865	.8698	.9531	7/16	.43750
15/32	.6224	.7057	.7891	.8724	.9557	15/32	.46875
1/2	.6250	.7083	.7917	.8750	.9583	1/2	.50000
17/32	.6276	.7109	.7943	.8776	.9609	17/32	.53125
9/16	.6302	.7135	.7969	.8802	.9635	9/16	.56250
19/32	.6328	.7161	.7995	.8828	.9661	19/32	.59375
5/8	.6354	.7188	.8021	.8854	.9688	5/8	.62500
21/32	.6380	.7214	.8047	.8880	.9714	21/32	.65625
11/16	.6406	.7240	.8073	.8906	.9740	11/16	.68750
23/32	.6432	.7266	.8099	.8932	.9766	23/32	.71875
3/4	.6458	.7292	.8125	.8958	.9792	3/4	.75000
25/32	.6484	.7318	.8151	.8984	.9818	25/32	.78125
13/16	.6510	.7344	.8177	.9010	.9844	13/16	.81250
27/32	.6536	.7370	.8203	.9036	.9870	27/32	.84375
7/8	.6563	.7396	.8229	.9063	.9896	7/8	.87500
29/32	.6589	.7422	.8255	.9089	.9922	29/32	.90625
15/16	.6615	.7448	.8281	.9115	.9948	15/16	.93750
31/32	.6641	.7474	.8307	.9141	.9974	31/32	.96875
1	.6667	.7500	.8333	.9167	1.0000	1	1.00000

CONSTANTS FREQUENTLY USED IN COMPUTATIONS.

	LOGS.
$\pi=3.14159265$	0.49715
$\frac{\pi}{4}=0.78539816$	9.89509—10
$\frac{1}{\pi}=0.31830989$	9.50285—10
$\sqrt{\pi}=1.77245385$	0.24857
$\pi^2=9.86960440$	0.99430
$\sqrt{2}=1.41421356$	0.15051
$\sqrt{\frac{1}{2}}=0.70710678$	9.84949—10
1 Meter=3.28083′ nearly 3′3$\frac{3}{8}$″	0.51598

Circumference of a circle whose diameter is 1′0″=π′, nearly 3′1$\frac{41}{64}$″

Length of Arc for Dia.=1′0″:

	LOG.
Arc of 1°=0.0087266 of a foot, nearly $\frac{7}{64}$ of an inch	7.94085—10
Arc of 1′=0.0001454 of a foot	6.16270—10

Length of Arc for Rad.=1′0″:

Arc of 1°=0.0174532 of a foot, nearly $\frac{7}{32}$ of an inch	8.24188—10
Arc of 1′=0.0002908 of a foot	6.46373—10

READY SUMMER, 1914

Parallel Tables of Slopes and Rises

IN COMBINATION WITH

Diagrams of Slopes and Rises

By CONSTANTINE K. SMOLEY

Author of Parallel Tables of Logarithms and Squares

IT IS sincerely believed that the new tables will prove an even greater time saver than the Parallel Tables of Logarithms and Squares.

When the bevel or slope of the hypotenuse of a right triangle is given and one of its sides, expressed in feet, inches, and fractions of an inch, is known, the other two sides, also in feet, inches, and fractions of an inch, can be read directly from the tables.

These tables will be useful for many classes of work, but especially for that of laying out and checking the details of structural frames, as it will enable the draftsman to determine clearances, distances to first rivet, sizes of gusset plates, etc. without making large-size layouts as is the practice in the drafting room at the present time.

The Diagrams of Slopes and Rises will be similar to those for Solving Right Triangles given in this volume and will supplement the tables to advantage.

The new manual will be in convenient handbook size and well arranged for reference. The price will be $4.00 per copy, but any draftsman who will send his name and address to the author at 910 Taylor Avenue, Scranton, Pa., or to the McGraw-Hill Book Company, 239 West 39th Street, New York City, before July 1, 1914, thereby declaring his intention to purchase a copy, will have the privilege of securing one at a reduction of 25 per cent., and of having his name stamped in gold on the cover. Send in your name at once.